UNITED STATES DISTRICT COURT
DISTRICT OF SOUTH CAROLINA
CHARLESTON DIVISION

ROBERT A. FALISE, LOUIS KLEIN, JR., FRANK MACCIAROLA, CHRISTIAN E. MARKEY, JR., AS TRUSTEES,

Plaintiffs,

vs. CIVIL ACTION NO. 99 CV 7392 (JBW)

THE AMERICAN TOBACCO COMPANY, R. J. REYNOLDS TOBACCO COMPANY, B.A.T. INDUSTRIES, PLC, BROWN & WILLIAMSON TOBACCO CORPORATION, PHILIP MORRIS, INCORPORATED, LIGGETT GROUP, INC., LORILLARD TOBACCO COMPANY,

Defendants.

DEPOSITION OF: ALBERT MILLER, M.D.

DATE: June 2, 2000

TIME: 9:30 AM

LOCATION: Law Offices of
Ness, Motley, Loadholt, Richardson & Poole, P.A.
28 Bridgeside Boulevard
Charleston, SC 29464

TAKEN BY: Counsel for the Defendant
R. J. Reynolds Tobacco Company

REPORTED BY: Terri L. Brusseau, Registered Professional Reporter, CP, CRR

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ALSO PRESENT:

Charles Bridgmon, Law Clerk
David Roberts, Video Technician

(INDEX AT REAR OF TRANSCRIPT)

STIPULATION

It is stipulated by and among Counsel that this deposition is being taken in accordance

with the Federal Rules of Civil Procedure; that all objections as to Notice of this deposition are hereby waived; that all objections except as to form are reserved until the time of trial; and that the witness waives reading and signing of this deposition.

* * * * * * * * * * * * * *

(DFT. EXH. 1, Subpoena Duces Tecum, was marked for identification.)

VIDEO TECHNICIAN: We are now on the record. The time is approximately 9:43 AM. Today's date is June 2nd, 2000. This is the videotape deposition of Dr. Albert Miller. Counsel, please represent yourselves.

MR. SCHROEDER: I am Tom Schroeder, with Womble, Carlyle, for defendant R. J. Reynolds.

MR. THOMPSON: Brent Thompson, with Womble, Carlyle, for R. J. Reynolds Tobacco Company.

MR. DUNCAN: Tom Duncan, Shook, Hardy & Bacon, for the defendants Philip Morris and Lorillard.

MR. WESTBROOK: Ed Westbrook, with Ness,

Motley, for the plaintiffs. And with me is Charles Bridgmon, for the plaintiffs.

VIDEO TECHNICIAN: Please swear in the witness.

ALBERT MILLER, M.D.

being first duly sworn, testified as follows:

EXAMINATION

BY MR. SCHROEDER:

Q. Dr. Miller, would you please give us your full name.

A. Yes. Albert Miller, M.D.

Q. Dr. Miller, you've been deposed before; have you not?

A. Yes.

Q. Approximately how many times have you given your deposition?

A. 40 times.

Q. You understand, sir, that I'll be asking you a series of questions today?

A. Yes.

Q. And if at any point in time you don't understand my question, would you simply ask me to rephrase it? I'll be glad to do that.

A. Yes, I understand.

Q. And, otherwise, we will proceed on the

understanding that you've understood my question if you've provided an answer?

A. Agreed.

Q. Okay. Dr. Miller, I'm going to hand you what's been marked as exhibit number 1, which is a copy of a subpoena for documents. Have you seen this before?

A. I've never seen this.

Q. All right. Let me show you what's marked on page 3 as schedule A and ask you did you bring some materials with you here today constituting your file in this litigation?

A. I did.

Q. Okay. Is that what's before us here in this orange binder?

A. Indeed, yes.

Q. Okay. Does that contain all documents upon which you are relying in forming and providing your opinions in this case?

A. Yes.

Q. Are there documents that you considered and rejected in formulating your opinions in this case?

A. I think that's a difficult question to answer. There are documents in the form of papers in

the medical literature which I'm aware of and don't know that I consciously rejected them in not bringing them.

Q. Were you provided any documents by counsel in this case that are not contained in your files you brought with you here today?

A. I was provided with the expert reports of other witnesses in this which I did not pay much attention to and I did not bring. And I was provided with the expert reports of one particular witness

which I was asked to review, that witness being Dr. Harris, and I did bring those.

Q. Were you provided any other documents other than expert witness reports that pertain specifically to this case?

A. Not that I'm aware of, no.

Q. If you look at item number four on the attachment or schedule A to the subpoena. Do you have any other notes or drafts of any documents that you did not bring with you here today?

A. No.

Q. Okay. Were there other drafts of documents that existed at any point in time that are not contained in your file that you brought with you?

A. Well, when you say drafts, there were

earlier drafts to my own report which I discard when I come up with the finished report.

Q. Okay. Do you have any correspondence between you and any of the lawyers or anybody else with respect to this case that's not contained in that file?

A. Yes, but I don't routinely retain things like you're expected to show up to meet us at such and such a date. I meet them.

Q. Okay. I understand that. What -- so there is some correspondence that's not in your file, right?

A. Yes, which I don't retain because of its

routine nature.

Q. All right. Is any of that correspondence still existing in your office?

A. There might be some that seemed a little more substantial. I think there was some correspondence about I would be receiving these reports from Dr. Harris. I think they came in succession. There were five reports. And I received several and then the additional ones, so there was correspondence of them.

Q. And basically what I'm asking is are there some things -- some other correspondence in

your office that you have not discarded that is not in this folder?

A. That's true. That's what I'm describing.

Q. Okay. Apart from correspondence, are there any other documents that you have in your office or in some other place under your possession or control that are not contained in your orange folder that you brought with you here today that relate to this case?

A. No.

Q. Okay. The cases -- you said you've been deposed about 40 times before, right?

A. I have an exact listing so I could tell you.

Q. Okay.

A. Actually, this list is -- includes all telephone depositions as well. And it totals 56.

Q. Doctor, if you would, let me take a look at that list, please, sir. Thank you. Are these primarily asbestos-related cases, Doctor?

A. Those are all asbestos-related.

Q. On whose behalf were you testifying in these cases, the plaintiff or defendant?

A. Both, but the majority were for the

plaintiffs.

Q. Have you testified before, sir, on behalf of clients of the Ness, Motley law firm?

A. I don't believe so.

Q. Okay. We're going to want to get a copy of your file I think at a break.

MR. WESTBROOK: Sure.

MR. SCHROEDER: If we can get a copy of that.

BY MR. SCHROEDER:

Q. Do you have any -- strike that.

Have you had any relationship, Doctor, with the Johns-Manville asbestos company either as a consultant or in any capacity?

A. Not with the company.

Q. Okay. Prior to this lawsuit, have you had any relationship with the Johns-Manville personal injury settlement trust?

A. Yes. It wasn't really -- I guess it was a thwarted relationship. I was asked by the authorities that be at the Medical Center at Mount Sinai to apply for the position of medical advisor or consultant, which I did, with several of my colleagues and never heard from the trust after that.

Q. What year did you apply for that position?

A. I guess there was a notice that went out shortly after the trust was set up. Eight years ago, something like that.

Q. If I were to tell you that the trust was formed in approximately or at least came into being about November of 1988?

A. Yes, but I think that was -- this notice went out for this -- these positions of medical advisor some -- a couple years after that, so it could have been 1990 or something like that.

Q. All right.

A. Anyway, nothing ever came of it.

Q. All right.

A. Something which caused me some question.

Q. Do you still have in your file the materials relating to your application for that position?

A. No.

Q. Do you have any materials in your office relating to the Johns-Manville settlement trust?

A. No, other than the fact that I know it exists and patients of mine have received awards from the trust.

Q. Okay. Apart from the application you made to become an adviser to the trust that you mentioned just now, have you had any other communications with the trust prior to this lawsuit? Or I should say prior to your involvement in this lawsuit.

A. Not that I could recollect.

Q. Okay. Have you had any communications with other asbestos companies?

A. No.

Q. Okay. I believe you told us, sir, you have testified in the past on behalf of defendants in asbestos personal injury litigation?

A. Yes.

Q. All right. Which defendants have you testified for?

A. I don't know if it came to testifying. I evaluated cases and submitted reports for defendants in personal injury cases. I don't remember that any of those came to trial.

Q. Okay. Well, most asbestos lawsuits tend not to go to trial, right?

A. Fortunately, yes.

Q. Can you tell me, sir, which asbestos companies you provided work for in the past?

A. I don't know the companies. I remember the name of the law firm, but I don't remember which particular companies that firm was representing at that time.

Q. What were the injuries that you were -- have given consultation on for the asbestos?

A. What?

Q. Companies. What injuries?

A. What were the alleged injuries?

Q. Okay.

A. Because I remember one case in particular which I felt did not have any asbestos-related disease and had been misdiagnosed as asbestosis. I think -- I don't remember what the other ones concerned.

Q. Okay. Have you given consultation or testimony on lung cancer claims?

A. For defendants?

Q. For -- we'll start with defendants first.

A. I'm not sure what those other cases were for the defendants. I have for plaintiffs.

Q. Okay. All right. Do you have copies of your testimony in these cases?

A. No.

Q. Do you have copies of any of your testimony in these cases?

A. No.

Q. Who -- strike that. Do you usually get a copy sent to you?

A. No.

Q. From a transcript? Where would we go, sir, do you recommend, to find copies of your transcripts?

A. Well, I have a list of the trials I've testified at. And I guess you're more aware than I am how to get the transcripts. I just brought that list up to date.

Q. Okay. Is this your trial list that you have right there, sir?

A. Yes, dating back 20 years.

Q. All right. Okay. Sir, if I could see your file.

MR. SCHROEDER: Ed, what I would ask, I think, can we have somebody make a copy of this while we're taking the deposition and kind of move this along a little bit?

MR. WESTBROOK: Yeah, sure. I think you'll find in the file copies of some articles. You may not want to bother copying all of those. Maybe

you do.

MR. SCHROEDER: Okay. Why don't we go off the record just for a minute so I can make some directions on this so we can get this going during the break.

VIDEO TECHNICIAN: Off the record at approximately 9:58 AM.

(Off-the-record conference.)

VIDEO TECHNICIAN: Back on the record. The time is approximately 10:00 AM.

BY MR. SCHROEDER:

Q. Dr. Miller, would you tell us, please, sir, where you work?

A. Yes. I -- my prime position is as pulmonary program director for the -- it's now called the Saint Vincent's Catholic Medical Centers of New York. I have a faculty position at the Mount Sinai School of Medicine, Department of Occupational Medicine as well.

Q. Okay. Briefly, sir, I want to go back over a little bit of your background, if we can.

A. Sure.

Q. You graduated from medical school when?

A. 1959.

Q. And when you graduated, tell me very

UNCERTIFIED DRAFT OF DR. ALBERT MILLER

briefly what you did between 1959 and when you

accepted positions with the Catholic Medical Center and also with Mount Sinai.

A. Well, I spent the next five to seven years in training at the Mount Sinai Medical Center in New York in internal medicine and pulmonary medicine. I did two years of military service with the U.S. Public Health Service. And I began my faculty position at Mount Sinai and a private practice of pulmonary medicine in 1965. I rose through the academic ranks to a full professor at Mount Sinai in the Department of Medicine and in the Department of Occupational Medicine.

And in 1994, gave up most of my responsibilities at Mount Sinai to take this position at Saint -- at that time it was simply called Catholic Medical Centers. Saint Vincent's is a very recent addition to the title.

Q. What does your daily practice consist of today?

A. Primarily the care and supervision of care of patients by physicians in training at the medical center. Most of the care at the medical center is given by residents or -- than under the supervision of the teaching faculty.

Q. Do you see patients today?

A. I see a limited number of private patients with an office at the medical center.

Q. When you started your practice in 1959 to

1960, did you see patients at that time?

A. I started my practice in 1965 and I was -- my time was apportioned approximately two-thirds to the academic world and one-third to my private practice.

Q. All right. Did that apportionment remain roughly the same throughout the years up until 1994?

A. That's correct.

Q. Your academic portion of your practice consists of what?

A. At that -- until 1994, as I said, I rose through the academic ranks to become full professor of medicine with the specialty of pulmonary medicine and full professor of occupational medicine. Those are separate departments, both at the Mount Sinai School of Medicine. I oversaw the care of patients in both pulmonary medicine, internal medicine and also in occupational medicine. And I was the director of the pulmonary function laboratory at Mount Sinai.

Q. When did you first begin to work with

asbestos-related issues?

A. Quite early. One of my teachers as an intern in 1959 at Mount Sinai was Dr. Selikoff. And he shortly after that began making observations and seeing patients with asbestos problems. So quite early, in the '60s.

Q. Did you -- what I want to know is when did it become a regular part of your practice to work on asbestos-related issues?

A. I'd say in the early 1970s when I was appointed director of the pulmonary function laboratory, which was responsible both to the Department of Medicine and the Department of Occupational Medicine.

Q. You are a certified B-reader today; is that right?

A. Yes. I have been for about 20 years.

Q. Okay. Have you been continuously certified throughout that period of time?

A. I was last recertified one year ago.

Q. Has it been continuous throughout the period?

A. Yes.

Q. All right. Was there ever a point in time when you did not pass a B-reader exam?

A. No.

Q. All right.

A. I think it was six recertifications and one original certification.

Q. Okay. Are you graded, sir, as an overreader or an underreader?

A. I have no idea.

Q. Do you know what it means to be graded as an overreader through the B-reader exam?

A. I know what it means to be considered an underreader or overreader. I don't know how you are graded as such.

Q. And what does it mean to be considered an overreader?

A. Well, in any field of interpreting what can be conflicting shadows, whether it be in radiology or other fields of medicine, there are some people who tend to see more than others, so I guess the ones at the one end of the spectrum are overreaders and at the other end are underreaders.

Q. And you can pass the B-reader exam and still be considered at either end of that spectrum; isn't that right?

A. The mechanics of the grading of the exams have eluded me and I cannot comment on that. I think

the purpose of the exam is that you should not be too much of either one. I'm sure that within those who pass, there may be some variability, but my understanding of the purpose of this examination is to make sure that those people who read, at least when they read X-rays for the examination, are not off at either extreme.

Q. But my question was: You can be a certified B-reader and either overread some X-rays or underread some X-rays, right?

A. Some -- that raises a separate question.

Are you Mr. -- I know your first name is Tom.

Q. Schroeder.

A. Mr. Schroeder.

Q. Yes.

A. In reading the exam, there will always be -- there are 150 X-rays in the initial exam and there are going to be some X-rays every reader, including a reader who will pass the exam and become a B-reader, will read more than the panel, whichever panel sets up the exam, and there will be some X-rays which that reader reads more than or less than the panel. I don't know how consistently someone who passes the exam strays from the panel.

Q. Well, that notion of straying, if you

will, is often referred to as either interobserver or intraobserver variability; is that correct?

A. Well, that would be I guess interobserver variability.

Q. All right. And so the notion is that if you're a B-reader and you're reading X-rays for potential pneumoconiosis or asbestosis, that even different B-readers can read the X-rays and possibly come to different conclusions, and that's known as interobserver variability?

A. No doubt that's true, as I said in all matters of radiology and other interpretive areas in medicine.

Q. What is the rate of interobserver

variability on B-reader examinations? And by that I mean reading the B-reader X-rays.

A. That you would have to ask someone who sets up these exams and grades them.

Q. Okay. It's your understanding, is it not, that there is a fair amount of variability between different B-readers on reading X-rays, right?

A. There is -- I don't know what a fair amount is. There is certainly a degree of disagreement.

Q. All right. And even the same person

reading X-rays for potential asbestosis can come to differing conclusions depending on when they read the X-ray, right?

A. No doubt.

Q. And that's known as intraobserver variability, right?

A. Yes.

Q. All right. Let me ask you the same question. What is the level of variability or difference on intraobserver variability?

A. Well, that's something that you can't judge from the B-reader exam because that's given at one time and you don't read the same X-ray more than once in the exam. I don't know what rates of intraobserver variability are. It exists.

Q. You're familiar with literature that

suggests that possibly up to a third of B-reader conclusions from X-rays can differ based on either intra or interobserver variability, right?

A. Yeah. I don't remember specific percentages, but there is certainly a percentage. And that's true of reading X-rays, as I've said. Not by B-readers and not for lung disease. This problem exists in reading CT scans for strokes and brain tumors and so on.

Q. It's not an exact science, is it?

A. It's not entirely a science.

Q. All right. So it's almost art form?

A. Yes.

Q. And you said you didn't -- or you didn't know of an exact percentage in your own mind, but approximately 30 percent is what's reported in the literature, isn't that correct, on interobserver, intraobserver?

A. I don't remember the percentages. Some discernible percentage.

Q. And it was some percent that's of a meaningful magnitude, right?

A. Meaningful is not a precise term either. But certainly there will be some film that will be read one way at one time and read a different way another time.

Q. All right. What I'm trying to get at, though, sir, is the amount of variability on reading

X-rays for asbestosis is not a small issue, is it?

A. No, I don't think it's a small issue.

Q. All right. Would you be surprised if there were a 30 percent disagreement among B-readers on reading X-rays for asbestosis?

A. No, I wouldn't be surprised.

Q. Okay. All right. Sir, I'm going to ask you some areas that you consider yourself to be an expert in for purposes of this case. If we could just go down the list. Do you consider yourself to be an expert in toxicology?

A. Not in the general area, no.

Q. All right. Addiction or smoking behavior?

A. Not more so than most pulmonologists who are concerned about smoking behavior.

Q. Okay. There's nothing in your report that addressed addiction or smoking behavior, so it's fair to say you don't intend to give any opinions on that, right?

A. Other than the behaviors I've observed in my own experiences as a pulmonologist.

Q. Okay. You would agree with me there's nothing in your report on that, right?

A. Right.

Q. Do you consider yourself to be an expert in the diagnosis of pathology?

A. As a pathologist?
Q. Yes, sir.
A. Using the tools of the pathologist?
Q. Yes, sir.

A. I'm not a pathologist.
Q. All right. How about oncology?
A. Well, oncology is a part of medicine, internal medicine and pulmonary medicine, and oncology as a term in modern medical practice generally means someone who specializes in the treatment of malignancies by using chemotherapy.
Q. Do you do that, sir?
A. I don't do that.
Q. All right.
A. My patients have such treatments and I guide their care with an oncologist. As far as the diagnosis of malignancies, I consider myself an expert in the diagnosis of malignancies of the thorax.
Q. All right. When you do your -- when you write the literature that you've written on asbestos-related disease over the years, do you typically have a statistician working with you?
A. For many of the papers? Not all of the papers require statistical.
Q. To the extent that they require statistical analysis?
A. Yes. Yes.

Q. All right. And you defer to those

statisticians for the statistical analyses in your literature?

A. Yes. I try to understand what they're doing, but I can only go so far.

Q. Okay. Do you consider yourself then to be an expert in that area or do you defer to these people?

A. I generally defer.

Q. Okay. And that would be true I take it then for the area of biostatistics as well?

A. Yes.

Q. Do you consider yourself to be an expert in the area of genetics?

A. No.

Q. Or molecular biology?

A. No.

Q. All right. Sir, what did you do to prepare for this deposition?

A. I reread my report and several -- I glanced through several of my own papers which I referred to in that report and I updated those two lists of court appearances and depositions.

Q. Okay. Did you have any meetings with counsel?

A. No.

Q. All right. Did you have a meeting before this deposition with either Mr. Westbrook or somebody from the Orrick, Harrington firm?

A. No.

Q. All right. Have you had discussions about your opinions in this case with the lawyers representing the trust?

A. No. Other than I submitted my report. And after that, no. Other than that, I was asked to review the report of Dr. Harris. The reports of Dr. Harris.

Q. Why were you asked to review those?

A. I wasn't told why. I mean...

Q. Were you told to look for anything in the reports?

A. Much of what he writes about is based on the study at Mount Sinai with which I was involved.

Q. And that's the study of the '81 to '83 insulator cohort?

A. Yes.

Q. All right. Why did they want -- I'm sorry. What was your understanding of why you were to be looking at that aspect of Dr. Harris' report?

A. My understanding wasn't told me, was to see how sound his analysis was of that using that

study. I know he took some of the experiences with the insulators at Mount Sinai not only in that study, but in other interactions between Mount Sinai and the insulators. He used those as the basis for his own opinions.

Q. Okay. And we'll talk about that some here in a little bit, sir. Have you reviewed any of the claims files of any of the claimants to the Manville trust?

A. You mean the individual victims of disease?

Q. Victims of asbestos disease, yes.

A. Yes. Is that what you mean by claims?

Q. Yes.

A. No.

Q. All right. Did you ask to look at any of those?

A. No. Of course, that's what I thought I would be doing as the medical advisor. But, as I said, that never was responded to by the trust.

Q. Okay. Have you discussed your -- well, strike that.

Have you had any discussions with any of the witnesses in this case, either Dr. Harris, Dr. Smith, anybody else?

A. No.

Q. So I take it by that you've not talked

with Dr. Rabinovitz?

A. There was -- when I was asked to be an expert witness by the firm in New York, Orrick, et cetera, I met with several attorneys from that firm on two occasions. And there were some other people who were being asked to be experts who were in the room on one or the other of those occasions. And I don't remember who they were. I was introduced to them. One of them may have been Rabinovitz.

Q. When was this meeting?

A. Right after I was asked to be an expert. I guess around the turn of the year.

Q. Turn of 1999?

A. Well, what was the date of my report? You have it. If it's dated.

Q. August of '99.

A. Um-hum. So then obviously this was earlier.

Q. All right. Who do you recall being in the room? Which experts do you recall being in the room?

A. No, I don't recall anyone in particular. I was just introduced to someone sitting around the

table and was told that this person was going to be doing I believe some statistical analysis of the trust.

Q. Was it a woman?

A. One of them was a woman.

Q. All right. Did you have any communications with her at all after that meeting?

A. Not that I recall.

Q. All right. Do you know Dr. William Nicholson?

A. Yes.

Q. Have you had any communications with Dr. Nicholson about this case?

A. Other than telephone conversation shortly after I received a letter from the Orrick firm, which I believe mentioned his name, and I don't know whether he called me or I called him, to the extent of my asking what am I getting involved in.

Q. All right. What did he tell you?

A. He said that -- he told me what the case was about and then I learned further after I met with the attorneys.

Q. How did he describe what the case was about?

A. I think pretty much that this was an

action brought by the trust against the manufacturers of cigarettes.

Q. Okay. What else did he say?

A. Very little.

Q. What was his opinion about the lawsuit?

A. I don't think we discussed that.

Q. Did you have some hesitation of being

involved in the lawsuit?

A. I always have some hesitation.

Q. Why is that?

A. I find the legal process a difficult, impenetrable, and difficult one.

Q. Why is that?

A. Why? Because what's considered truth in the law is not always what's considered truth in medicine and science, and methods of demonstrating truth are different and proofs are different and understanding of scientific processes is incomplete in the legal profession.

Q. The scientific method is important in the medical profession, right?

A. Yes.

Q. And is it your experience that the scientific method is not always applied as fully as it should be in the courtroom?

A. I don't know whether it's as fully as it should be for the purposes of the legal profession, but --

Q. How about for purposes of the medical profession?

A. It's incomplete. I mean, many things which may be relevant to a question are barred by some legal consideration where they would shed the most light and you find yourself discussing things which are less important.

Q. What was the purpose of this meeting that you had with the other experts which you just told us about?

A. It wasn't a meeting with them. They were present, I guess the same briefing session with the -- several attorneys of this firm in New York.

Q. And what was the purpose of the meeting?

A. To tell us what this case, Falise, was about and --

Q. What did they tell you?

A. Well, I could tell you what I think they told me.

Q. All right.

A. That the trust -- I'm not sure I know who Falise, et cetera, Macciarola, et cetera, are, but

that the Manville resolution trust which had been expending monies for claimants who were judged to have various asbestos-related diseases felt that these diseases were also contributed to by the cigarette smoking of these claimants and that they were bringing a legal action to obtain, I guess, from remuneration for that portion of what they had expended on behalf of these claimants which they felt was contributed to by their smoking.

Q. Did they tell you that it was their position that the trust was overpaying its fair share?

A. Yes, I think that would be.

Q. Did they ask you to evaluate whether or not that was, in fact, the case?

A. Yes. That's what I attempted to do in part in the report which I prepared.

Q. Okay. And we'll get to that in just a minute, sir. Was Dr. Harris at this meeting?

A. No.

Q. Was Dr. -- do you know Dr. Alan Smith?

A. No.

Q. Do you know was he at the meeting?

A. Not that I remember.

Q. Was Dr. Tom Florence at the meeting?

A. No.

Q. Was Dr. Brody at the meeting?

A. No. I have met Dr. Brody. And not in connection with this. Dr. Brody is a well known figure in the world of pulmonary medicine and asbestos disease.

Q. Dr. Gamsu at the meeting?

A. No.

Q. Dr. Kelsey at the meeting?

A. No.

Q. What other medical doctors were there?

A. I don't recall anyone else except there was one or more -- there were one or more people in the room, and I don't know that all were introduced to me and their names didn't particularly register

any more than I'm sorry to say your names did this morning. But the one name, Rabinovitz, perhaps because I saw it again or heard it again I recall.

Q. All right. Are you charging a fee for your time in this case?

A. I certainly am.

Q. What is your fee?

A. My fee for testifying either at a deposition or a trial is 450 dollars an hour.

Q. How much have you accumulated so far in

fees in this case?

A. The only accounting I made was for whatever time I spent preparing my report, which I now learn is almost a year ago, and I don't remember what the fee was. I know I submitted a bill for that and it was paid.

Q. What I'm interested in, Doctor, is approximately how much you've charged.

A. That is the only time I charged. I don't remember what it was. I have some rough notes of additional time I've spent on the telephone and in reviewing the Harris reports.

Q. Are those notes in your file?

A. No, I mean just of the hours. They're not in my files.

Q. But you still have those?

A. Somewhere. Because I intend to bill for

those hours, but I have not done so yet.

Q. Do you keep notes when you have conversations like that with lawyers with whom you consult?

A. I may not keep the notes that very instant, but I then jot down the amount of time and the date.

Q. Okay. How much time have you spent on

this case so far?

A. Oh, a considerable number of hours. I can't give you --

Q. What is your best recollection?

A. I am sure at least -- including the time I prepared the report and I met with the attorneys on two occasions before that, that was in my only bill. In the time since then, I've had considerable phone calls. And as I said, I reviewed --

Q. I'm sorry. I don't mean to cut you off, Doctor, but what I'm interested in --

A. I don't have -- I'm guessing, estimating 15 hours.

Q. Okay. What percentage of your time is spent today dealing with litigation?

A. This particular litigation?

Q. No, sir, generally. What percentage of your professional time is spent dealing with litigation either for -- for anybody.

A. Of course, that varies. I'll try to

average it over the course of a year. I would say perhaps 20 percent. 15 to 20 percent.

Q. What percent of that time is spent for litigation on behalf of plaintiffs?

A. Most of that.

Q. All right, I'd like to talk with you briefly, Doctor, again about when you first became involved in this case. I think you told us you got your first contact in the case in approximately first part of 1999; is that right?

A. I guess. Time goes by more rapidly than I thought.

Q. And your billing records would be more accurate reflection of when you got called upon?

A. Yes.

Q. Who contacted you?

A. An attorney from the firm of Orrick, Harrington, et cetera, Sutcliffe. Did I get three of the names?

Q. All right. What were you asked when you were contacted?

A. I was asked whether I had worked in the area of asbestos diseases and what my positions were at Mount Sinai and whether I was familiar with the insulator studies, which there were several. And then I was asked to formulate this report on the interactions of smoking and asbestos.

Q. So when you were retained, it was your understanding that the trust had filed an action against the tobacco companies, right?

A. Yes.

Q. And it was your understanding that the trust's goal was to seek reimbursement from the tobacco companies for injuries that were asbestos-related, right?

A. That were asbestos-related and also smoking related.

Q. All right. But you understood that that was your direction, was that your involvement would be to pursue recovery from the tobacco companies for the -- a portion of the injuries, right?

A. Well, I don't believe it's my role to pursue that. I was to provide medical information that would permit you guys to pursue it.

Q. And you understood that your role --

A. Yes.

Q. -- was to provide the medical materials?

A. Yes.

Q. For that argument, right?

A. Yes.

Q. All right. What specifically were you asked to do? Because your report address some issues but doesn't address other issues in the case, so what I want to know is what was it specifically you were supposed to address?

A. I'm not sure if they said it or I understood it. I understood that I was to address the interactions of smoking and asbestos exposure, interactions meaning how each one might increase the effect of the other and, also, to see how the effect attributable to cigarette smoking might have been included in the awards of the trust.

Q. Now, you haven't -- you said you haven't looked at any of the claims files, right, for the trust claimants?

A. Individual claims, no.

Q. So you don't have any personal knowledge as to what the trust did in terms of evaluating claims, right?

A. Well, I was given to review and I believe it's in the file. I brought the algorithms that the trust uses in making its awards.

Q. You're talking about the trust distribution process?

A. Yes.

Q. The TDP?

A. Yes.

Q. If we call that the TDP, we'll understand what we are talking about?

A. Yes.

Q. All right. And that's the matrix, if you will, for how they decided they would make payment, right?

A. Yes.

Q. All right. We'll talk about that in a minute. But apart from looking at the matrix, you don't have any personal knowledge of how that was, in fact, applied to the trust claimants, do you?

A. Do you mean wherever it is in Washington or Weston or whatever?

Q. Right.

A. What they did? No.

Q. You have what they claimed they used?

A. Yes.

Q. And then that's all you have, right?

A. I have the knowledge of what these diseases are and how they show up on X-rays and pulmonary function tests, et cetera.

Q. Okay. So you can't tell us, though, can you, sir, whether or not the trust actually followed, first of all, the TDP, right?

A. No.

Q. Okay.

A. What they did, I don't know.

Q. Okay. And I take it, sir, since you

didn't look at the claim files or they weren't

provided to you, that you don't know what jobs the claimants actually held, do you?

A. No.

Q. And you don't know where the claimants lived?

A. No.

Q. You don't know how many of the claimants were male versus female, right?

A. No.

Q. And you don't know what percentage of the claimants had any particular disease that was ultimately compensated for, right?

A. No.

Q. You don't know what percentage of the claimants actually smoked cigarettes, do you?

A. I think some of that was in the report of Dr. Harris.

Q. All right. You don't have any personal knowledge?

A. No.

Q. Do you?

A. No.

Q. So just to be clear, you don't have any personal knowledge of the percentage of trust

claimants who actually smoked, right?

A. Other than what I said, that in reading these rather voluminous reports, I think Dr. Harris

mentions a figure of --

Q. What I'm interested in is whether --

A. Personally.

Q. Personally did you go?

A. No.

Q. Okay. So you didn't go to the claims files to try to figure out how many smoked?

A. No.

Q. All right. And I take it then because of that you don't know how much they smoked, right?

A. Equally.

Q. So that would be correct, right?

A. Yes.

Q. And not having looked at the claims files, you don't know what kind of medical information is contained in those, do you?

A. No.

Q. You had said previously that you have done some work in connection with other asbestos manufacturers through lawyers for claims, right?

A. Well, I've been a medical expert for various attorneys who were -- this is for the

defendants you're talking about?

Q. Not for the defendants. I'm talking about for an asbestos manufacturer.

A. Yes, I was for one law firm. And as I said, I don't know which his clients were.

Q. Okay. Have you provided any assistance

to any asbestos trust set up as a result of an asbestos company's bankruptcy or other resolution?

A. I was asked by the -- actually, by Dr. Selikoff to review several matrixes that were being proposed. One of them was being proposed by a law firm which I guess was known for representing plaintiffs, I believe was the Angelo's firm in Baltimore, to put my knowledge of these diseases to use in coming up with a matrix. And I made various comments. And, again, as far as I know, nothing came. I don't think these matrixes were ever agreed to or came into being. But at various stages of their being proposed, I commented on the medical aspects of these matrices.

Q. Okay. Mr. Angelo's firm you understand to be a firm that represents the plaintiffs in these cases, right?

A. That's what I -- I've never had any doings with that firm.

Q. Okay.

A. Other than that time.

Q. All right. And you understood at the time I take it that the matrixes were being negotiated or you thought they were being negotiated between the plaintiffs and whoever the asbestos companies was?

A. Right. In order to, I guess the term was

to bring some water into this process.

Q. All right. Do you know what asbestos trust that was for?

A. I don't know that it was a trust. I think it was some kind of agreement they were going to come into.

Q. All right. Have you done any work for the H. K. Porter Asbestos Trust?

A. No.

Q. All right. Are you retained by anybody to do work for the H. K. Porter Asbestos Trust?

A. No.

Q. All right. Have you done any work for the asbestos trust being set up for the Raymark Company?

A. No.

Q. All right. Have you been retained by

anybody to do work for Raymark's asbestos trust?

A. No.

Q. Have you been retained by anybody else to do any work for any asbestos trust?

A. No.

Q. To your knowledge, is there anything else that you are going to do between now and the time of trial in the Falise case to prepare yourself for trial?

A. Not that I'm aware of now, no.

(DFT. EXH. 2, document entitled Expert

Witness Statement: Falise et al. V. American Tobacco Co. et al, 97-CV-7640, was marked for identification.)

BY MR. SCHROEDER:

Q. Okay. All right. Dr. Miller, I'm going to hand you what's been marked as exhibit 2 to your deposition. That's your report in this case, right?

A. Yes.

Q. Were there earlier versions of that report before it made it into the final form?

A. Yes. And the first version was handwritten on yellow paper by me, but I only submitted one final draft.

Q. How many drafts did it go through before

it made it into the final process?

A. Generally, I guess three or four.

Q. Okay. What happened to the drafts?

A. I discard those when I have a final draft.

Q. Okay. Did you get input into] The report through the folks at Orrick, Harrington?

A. No. As I said, those are merely between me and my often not fully competent secretaries. And when we finally reached a final draft, I submitted it and there were no alterations after that.

Q. All right. In the drafting process, did you have discussions with some of the lawyers?

A. No.
Q. About what you intended to cover?
A. No.
Q. If you would take a look, sir, at page 3 of your report. The opinions you intend to offer in this case are contained on pages 3 through 7, correct?
A. I guess. I don't remember the specific pages, but...
Q. Would you like to take a moment and refresh your recollection?
A. If I can have the -- is this the copy I

included in my folder? I may have underlined parts there.
MR. SCHROEDER: Why don't we do this, if we can. Can we take a quick break, get a copy of this material and then we can use his copies?
MR. WESTBROOK: Yeah.
MR. SCHROEDER: Let's do that.
VIDEO TECHNICIAN: We will now go off the record. The time is approximately 10:46 AM.
(A recess transpired.)
(DFT. EXH. 3, document entitled The Diagnosis Of NonMalignant Diseases Related To Asbestos, was marked for identification.)
VIDEO TECHNICIAN: Back on the record. The time is approximately 11:08 AM.

BY MR. SCHROEDER:

Q. Doctor, I'd like to ask you a few questions about your practice when you see patients. When you have a patient coming in for an initial consultation and there is a question of whether they have an asbestos-related disease, what information do you collect from that patient through your office?

A. I personally interview the patient, obtain a medical history and a detailed occupational

history. I examine the patient and I review what may be in his file or may not be in his file that he's able to bring with him or send to me. So that could include the existing X-rays and pulmonary function tests, pathology reports, et cetera. Or I would obtain those if they're not available or they haven't been done.

Q. Okay. And I want to talk with you about those in a minute, but let me ask you this: When you testify in connection with an individual plaintiff's asbestos-related case, is this the same type of information you try to gather as well from that plaintiff or patient?

A. Well, very often I don't see the plaintiff, the plaintiff patient, he's deceased or he lives elsewhere, so I would be dependent on the medical record.

Q. But in order to render an opinion, you

would ideally like to have the same information you would have as if the patient were a patient of yours in the office, as if the plaintiff were a patient of yours in the office, right?

A. Yes and no. Very often when you're dealing with a patient in consultation, you generally don't have the final answer on the case. That's why

you're being consulted. So you're depending on the information available up till that time. In other situations -- I'll go to the extreme. If a patient comes to me with a pathology report showing the changes under the microscope characteristic of asbestosis, it's less important to me what the X-ray shows.

Q. All right. Well, most -- most patients don't have lung pathology for asbestosis, though, do they?

A. Many, many, probably most, do not.

Q. Right. Because that's an invasive procedure and oftentimes cases are diagnosed in connection with the various history that you just gave us, right?

A. With the history and the findings of the physical exam, the X-rays, CT scans and pulmonary function tests.

Q. Okay. And because you require those, I take it you find these to be important indicators in order to allow you to make a diagnosis as to a

patient of yours?

A. Yes.

Q. All right. Let's talk about them for a minute. What type of information do you get on your

medical history of your patient that you deem to be important?

A. His symptoms, how they affect his functioning, how long they've been present, and how they've evolved over the course of time. Of course, there's other medical problems and medications and experiences in life. His smoking history is always obtained, other -- other habits that might be relevant, drinking. That's all part of the relatively standard medical history. That's what we teach medical students to do.

Q. Do you gather the family history as well?

A. Yes.

Q. Do you find that to be important?

A. In many diseases, not generally with asbestos-related diseases. In certain situations it may be that it may be relevant in those, too, but not generally.

Q. Okay. Well, let's pick one in particular. Lung cancer, that would be one that would be more relevant, right?

A. A family history?

Q. Yes. Including a family history of

cancer.

A. To some limited degree. I don't think it

would be the major consideration even if there were a possible family history of lung cancer.

Q. But it certainly would be a factor that might bear some importance on your diagnosis?

A. In the real world, no, because you have -- when you're dealing with a disease like lung cancer, you have to have a proven diagnosis. And whether the family history is positive or not is almost irrelevant. You're going to need definitive diagnosis either way.

Q. Okay. What about since you're a pulmonologist and you're looking at lung injury or potential lung injury, prior history of asthma, that would be important, wouldn't it?

A. Absolutely.

Q. Okay. Because asthma could be a confounder for COPD, right?

A. Yes.

Q. Okay. So we take a detailed medical history when you see a patient is what you say, right?

A. Yes.

Q. And then the next thing you mentioned was in addition to that is you take a detailed occupational history, correct?

A. Yes.

Q. Tell me what you ask for in connection with the occupational history.

A. The -- not only the jobs, but the actual work experiences that the patient has had over his entire working career, the exposures on those jobs. That would include very often what other workers were doing who were working on the same site as he was. Certain activities that may not be fully work. They may be have personal renovations he makes on his home or on his basement, his heating system, et cetera, you know, that's not strictly occupational but it's relevant to his exposure.

Q. Do you find patients of yours who have done fairly limited home renovations on their heating system, for example, to have asbestos-related disease down the road?

A. Well, when that was their only exposure, no, that's relatively infrequent.

Q. Why is it important to gather information about their jobs, their work experiences and their various exposures?

A. Well, it's important for many diseases, but it's particularly important for lung disease because many lung diseases are contributed to by the

exposures of the workplace. I could give you a long list of these diseases.

Q. Well, tell me which ones they are that are contributed to by various exposures.

A. Well, there's a general category of pneumoconiosis which is caused by different inorganic dusts and fibers like asbestos and silica, talc, beryllium. There are a number of different exposures which contribute to the risk of lung cancer.

Q. What are those?

A. Again, that's a long list. Radiation of certain types, arsenic, nickel, chromites, certain organic volatile materials. And there are many, many organic exposures which contribute to asthma and to hypersensitivity pneumonia.

Q. What exposures are those?

A. As I said, these are organic dusts, particulates. They may be wood dust, they may be grain dust, they may be animal aerosols in laboratory workers, they may be enzymes, they may be dusts in pharmaceutical manufacturing. Again, we could go on for three or four pages of just listing these possible exposures.

Q. In a population of people who are occupational workers, these prior exposures bear

importance; do they not?

A. Yes.

Q. Without any exposure history, it would make it, I take it -- make it difficult for you to give a definitive diagnosis on disease, right?
A. On certain diseases. Other diseases are less relevant.
Q. Let's take asbestosis. In order to make a diagnosis on asbestosis, you would need a reliable history of prior asbestos exposure, right?
A. In many situations there are situations in which you could make a reliable diagnosis of asbestosis. In a patient who is unable to give you a history, he's dead and no history exists or he's comatose or he's got Alzheimer's disease or whatever, there are situations where the clinical findings are so pathonomic that you could say this is asbestosis.
Q. Under the ATS standards, one of the things you need to have to make a diagnosis is a reliable history of exposure, right?
A. These are all things that are considered useful in the diagnosis of asbestos-related disease. As I said, there are situations where no medical history is available or -- and given certain findings, you could make a firm diagnosis even in

that situation.
Q. Okay. The ATS standard requires that there be two necessary elements, and they are a reliable history of exposure and an appropriate time

interval, correct?

A. I don't know how they word it.

Q. Let me show you what's been marked as exhibit number 3 and ask you if you would identify that.

A. I'm familiar with the document.

Q. Can you identify that as the ATS standards for diagnosis of asbestosis?

A. Yes.

Q. All right. Take a look on the last page, sir. There's a summary that says -- under summary, do you see that, sir?

A. Yes, I see.

Q. Right before number one, it says: In our opinion, it is necessary that there be, one, a reliable history of exposure. Do you see that?

A. Yes. I'm just checking further.

Q. Okay.

A. Yes.

Q. Do you agree --

A. I see what they say.

Q. Do you agree or disagree?

A. Unfortunately, this is a limited consideration of a very large area of medicine, and I stand by my statement that there are -- there are situations in which a history is not available and you could still make a firm diagnosis of asbestosis.

Q. Okay. All right. And to be clear then,

you would disagree with the statement in exhibit number 3 that a reliable history of exposure is necessary in each and every case?

A. In each and every? I would have to disagree because it flies against the experience of not only myself, but of any other experienced pulmonologist.

Q. Okay. So to be clear, though, you disagree then with that statement?

A. Yes, I do, with that statement as it's worded.

Q. Okay. All right. You then said you would take I believe a history from your patients, a general history from your patients. Tell me what you meant by that.

A. I believe I detailed it more than just saying a general history.

Q. All right.

A. A general history would include all that I already said about the symptoms, the evolution of the symptoms, other diseases that person has had, treatments for those diseases, et cetera.

Q. Okay. And then you would examine the patient, right?

A. Yes.

Q. And tell me what you would do during your examination.

A. I would do nothing other than what any careful physician would do. I would -- and the process of physical examination is fairly straightforward. It consists of obtaining the vital signs, the blood pressure, the pulse, weight, height, et cetera, and examining each portion of the body for whatever abnormal findings you could elicit.

Of course, part of that examination includes the examination of the lungs with a stethoscope, by percussion with your hands, observation of the patient's state of comfort, distress, coloration. But all parts of the body are examined, the abdomen, the extremities, the skin.

Q. And when you examine the lung, you do that by stethoscope; is that right?

A. By stethoscope, by palpating the chest

wall, by percussing the chest.

Q. All right. Tell me what you're looking for when you use the stethoscope.

A. The findings using the stethoscope are called auscultatory. That means audible findings. There are many such findings which would apply to some diseases and not to others. You listen for the quality of the breath sounds --

Q. When you said they apply to some diseases and not others, then the stethoscope examination of each patient allows you then to make a diagnosis as to whether it's one disease versus another?

A. It can.

Q. Okay. All right.

A. Doesn't always.

Q. All right.

A. That's why we do the other things. If you could do it entirely with a stethoscope, we'd put a lot of X-ray equipment manufacturers out of business. But we -- if these findings are present, they could point to certain diseases.

Q. Okay. What other examinations then do you do with a stethoscope?

A. Well, we listen to other parts of the body with a stethoscope. Obviously, the heart is a

major other organ that's examined by stethoscope. Sometimes the blood vessels.

Q. When you listen to the lung with a stethoscope, you're listening for things like crackles and rales?

A. Right. Wheezes and rhonchi and a whole host of other phenomena. And for the quality of the breath sounds, whether they're reduced in amplitude, whether they're absent, whether they have a bronchial quality. So those are normal sounds that everyone has. They may be of different characteristics. That's of use. Rales, wheezes are sounds that normal people do not have.

Q. Okay. And so is it fair to say then an

examination of a patient with a stethoscope on the lungs helps you to get to a decision as to whether this might or might not be an asbestos-related disease?

A. Before that it helps you in your decision as to whether there is a disease at all.

Q. Right. And then as you're looking at the patient, if the consideration is that the patient may have an asbestos-related disease, using a stethoscope helps you as a physicianly exposed people?

A. They're not exempt from these diseases.

Q. All right. Now, forced vital capacity, if we call that FVC, we'll all understand what we're talking about?

A. Yes.

Q. All right. What is the lower limit of normal for FVC?

A. That is the -- well, there are many definitions of this. And one of the problems with this ATS statement is that they don't give you any guidance as to how to identify the lower limit of normal. I could tell you what -- how I define it.

Q. How do you define it?

A. I think my definition is consistent with the best statistical input, and my definition of the lower limit of normal is the lower 95 percent confidence limit. And this is the value that 95 percent of normal people would be above. So if you

have a value of -- forced vital capacity is measured in liters. So if you have a value of 4.0 liters for a particular individual, you compare that with published normal values and you can determine whether that value is within the 95 percent or below the 95 percent.

Q. Okay. There are different interpretations of what's the lower level of normal; is that what you're saying?

A. Yes.

Q. And your definition of the lower limit of

normal would be something that differs with age then, I take it?

A. Yes.

Q. And it would differ with height?

A. Yes.

Q. And with weight?

A. No.

Q. More obese people would not have a different lower limit of normal?

A. More obese people would have a lower value, but that would be a consequence of their obesity as a disease in the same way that they could have another condition that make their value lower.

Q. What conditions will affect your value?

A. Other than the lung diseases we've already mentioned?

Q. Well, that's a broad statement, so let's go back. Tell me apart from asbestosis and asbestos-related disease what other conditions or diseases could affect the forced vital capacity? And you did mention heart disease, valve disease. Apart from those.

A. Yes. Almost any disorder of the lung could affect the forced vital capacity, asthma, COPD, pleural effusions, collections of fluid in the

pleural space, space occupying lesions in the chest cavity, cysts and tumors, diseases of the pleura, scarring of the pleura, sometimes called fibrothorax. Any disease of the bony structure of the chest, including the thoracic spine.

A very common disorder is called scoliosis, in which the spine is deformed. Diseases of the muscles or of the innervation of the muscles of the chest. All of these could cause a decrease in the forced vital capacity.

Q. And many of those, if not most of those, are not affected by asbestos, are they?

A. Certain of them can be, the pleural scarring can be, but many of them are not.

Q. Okay. So relying on an FVC alone, you can't make a determination based on that alone as to whether something's asbestos-related or not?

A. If the only information I have is that the forced vital capacity was such and such a value,

I could not say that that had to be due to asbestosis.

Q. Okay. Now, you said your standard was 95 percent.

A. Confidence lower limit.

Q. Confidence lower limit. Okay. What is

that based on, a predicted value?

A. Yes.

Q. Who do you use as a comparison group for your predicted value?

A. My own published normal values.

Q. Okay. And that's different from the Michigan?

A. No, those are the Michigan predicted values.

Q. Who is comprised of that group of Michigan residents that you've used as your predicted group?

A. The subjects were particularly well suited, which is why we pursued this investigation. They were a stratified random cross-sample of the population of the State of Michigan.

Q. How did you stratify it?

A. How did we stratify? We stratified in an attempt to have representation of all parts of the state and not just the large metropolitan areas.

Q. So it's stratified based on location?

A. Yes.
Q. Is it stratified based on occupation?
A. No.
Q. Is it stratified based on what we would

say is white collar versus blue collar?
A. No.
Q. Okay. Did you personally collect that information?
A. Yes.
Q. When did you collect that?
A. Early in about 1980, '81.
Q. Okay. How many people are comprised of your Michigan group?
A. The total number of people we tested were several thousand, but the predictions are based on nonsmoking, healthy, nonoccupationally exposed individuals above the age of 18. So that came down to 511.
Q. So the group that you actually used for your Michigan comparison group are not occupationally exposed individuals, did I understand you?
A. Right.
Q. Okay. So when you compare your pulmonary function results from a patient, you compare that patient then to a group of nonoccupationally exposed Michigan residents as selected by your study?
A. More critically, nonsmokers.
Q. All right. So there are nonsmoking and

nonoccupational exposure?

A. Yes. And they have no evidence of lung disease and we were very stringent in how we defined that.

Q. Okay. Now, occupationally exposed persons would tend to have a lower forced vital capacity as compared to nonoccupationally exposed, correct?

A. That was our presumption. That's why we deleted them.

Q. Okay.

A. The same goes for smokers.

Q. Okay. So if you were to compare your results for a patient to occupationally exposed Michigan residents from your study, you would tend to find a smaller difference in FVC values, correct?

A. If we used as our normal values, people who are occupationally exposed?

Q. Yes, sir.

A. And if those people had lower values than our claimant, if that's who you're talking about, would look better.

Q. Right. And his FVC -- his or her FVC would tend to be --

A. A higher percent of that value.

Q. Okay.

A. There are many conflicting considerations as to whether an occupationally exposed group will, indeed, have lower values as a group and we could discuss or not.

Q. Okay. Your working presumption was that they would, so you excluded them?

A. Yes. There are considerations that go the other way as well.

Q. Okay. What considerations would those be?

A. Something called the healthy worker effect.

Q. Okay.

A. Which is well established in epidemiology that people who are able to regularly work, even if they are suffering effects of that work, are still going to be healthier than the general population because they're able to get up every morning and hold a job.

Q. Right. But when you look at FVC as the issue, even healthy workers can have reduced FVC and not be --

A. Right.

Q. -- an impairment that would affect their work, correct?

A. On the other hand, they're a preselected group and they may have a higher value, which is why scientifically we dealt w

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A. Yes.

Q. And that's contrary to what you would expect typically, isn't it?

A. I don't know whether that's contrary. I don't think I would --

Q. Wouldn't you normally --

A. Be relevant to the observation itself.

Q. As a general matter, isn't it true that the longer the latency and the more years in the trade, your odds ratio would go up for asbestosis?

A. The odds ratio they're talking about is the ratio attributable to smoking. And they say that that association was not affected by adjusting for asbestos exposure and/or age. That is the effect of the smoking. Didn't matter if you were more exposed

to asbestos or if you were younger or not. That's not the same as saying the relationship between asbestos and asbestosis is unaffected by age or asbestos exposure. They're talking about the association between smoking and the X-ray findings.

Q. Okay. Just so that I'm clear, it's your testimony that that study does not conclude that age and years in the trade of latency are not factors that affect your risk of asbestosis?

A. From what I've been able to review at

this moment, it doesn't address that question. It addresses the association between smoking and radiographic evidence of asbestosis.

Q. And you would agree, would you not, that if the asbestos exposures were more accurately measured, that those odd ratios very well would change?

A. Yes, but it's difficult to measure these things accurately, and that's been commented on before.

Q. Okay. The next study you rely on is Ducatman, 1990?

A. Yes.

Q. That study you're familiar with, right?

A. I'm familiar with it. I can't cite every

statistic he published.

Q. Okay. Just for the record, Doctor, these are all listed on your bibliography, right?

A. Yes.

Q. So in lieu of attaching them all to your deposition, they can be identified?

A. Yes.

Q. Simply by looking at your bibliography?

A. Yes.

Q. Okay. So the one you're looking at now the Ducatman 1990 referred to in your bibliography?

A. Yes.

Q. Now, Ducatman had very poor exposure --

A. Yes.

Q. -- information, right?

A. Yes.

Q. Okay.

A. And very low prevalence of abnormalities.

Q. In fact, only 1.1 percent had an ILO greater than or equal to one over one, right?

A. Yes.

Q. And only 2.5 percent had an ILO greater than or eqly exposed population. This population was studied in 1963 and they were insulators who are highly exposed, especially these insulators who were working in the '30s, '40s and '50s. They were studied in 1963.

So in these highly exposed workers, I would conclude that after 40 years, you couldn't tell the difference because all of them were showing the effects of their asbestos already and you couldn't see an additional effect.

Q. Okay. And this is using the ILO category of what, Doctor? Is it one over zero?

A. Let me see if they tell us that. Yes.

Q. Okay. Do you agree with these findings?

A. I have no reason to disagree with the findings as I see them listed in the table. And I told you my conclusion based on those findings. As applied to not only a very highly exposed occupation, the insulators, but to insulators as they were exposed in the '30s, '40s and '50s, which is different from their exposures in the '60s, '70s and '80s.

conclusion would be different if you measured people exposed in the '60s and '70s?

A. I would expect that 80 -- there would not be 86 percent because we haven't reached that yet. If we look at people who are exposed in the '70s, they haven't reached 40 years since then. But I would expect when they do reach 40 years, we would not see 86 percent of them with radiographic evidence of asbestosis, even if they were smokers. And we wouldn't see 74 percent if they were nonsmokers.

Q. Do you have any data upon which you can rely to make any determination as to how these results would differ based upon exposures from the 1960s and 1970s?

A. No, I don't have data except that I -- we do not in general in insulators see the degrees of asbestosis in people who have been employed 30 years because those we're beginning to see now compared with people employed 30 years ago that we saw 20 years ago. If you could follow what I'm saying.

Q. So what you're saying is the level of asbestosis you're seeing in insulators is on the down slide now?

A. Yes. Yes. I think everybody's experience has been that. This has been mentioned in

the medical literature.

Q. Okay. And how would you characterize that? Is it declining fairly significant at this point in time?

A. Yeah, I would say significantly.

Q. Okay. And that's a good thing from a public health point of view, that we are well on the back side of the exposure curve?

A. That exposure is in occupations even as exposed as insulators or less is certainly a good thing.

Q. Okay. Sure. Are you aware of any data upon which to give an opinion to a reasonable degree of medical certainty as to the effect, if any, of smoking on radiographic parenchymal abnormality based on asbestos exposures from the 1960s and the 1970s?

A. Confined to the -- I would have to give that some serious review of the literature. We're just getting to the edge of where we have a 30-year follow-up on people who began their exposures in the late '60s. So I'm not aware of any paper on that yet.

Q. Okay. So as you sit here today, you can't tell us with any reasonable degree of medical certainty as to how, if at all, smoking would have

any effect on radiographic abnormality for people exposed to asbestos in the 1960s and the 1970s, right?

A. I would expect that we would see the same relationship. If we say that heavily exposed workers like insulators are less exposed in the last 30 years, they would be more like the less exposed trades that we already have studied, like plumbers, sheet metal workers, shipyard workers. Some of those studies we've mentioned. Dr. Welsh's study was sheet metal workers. They were exposed in the '60s, but I am postulating that the insulators exposed in more recent years are similar in their exposure to the sheet metal workers in the earlier years.

Q. Okay. And by postulating, are you -- I take it are you as we sit here today prepared to give me an opinion based upon a reasonable degree of medical certainty on that issue?

A. I don't think that's a medical question, so I couldn't put it in that. That's more of a statistical analytical question.

Q. And can you answer the statistical analytical question as you sit here today?

A. To the best of my ability to make this statement, I would say that, yes, that I -- that as

the insulators are now exposed in a way that is similar to the exposures of less exposed workers in the past, they would show the same relationships with

smoking as those less exposed workers, and those studies have shown an effect of smoking.

Q. So your opinion would be, if I understand it right, that whatever exposures are reported in that literature already collected on lesser exposed individuals to asbestos, if you will, that you would then extrapolate from that to reach a conclusion as to exposures in the '60s and '70s; is that a fair statement?

A. And beyond.

Q. And beyond, okay. And when did asbestos exposure quit in the occupational trades?

A. I think by the mid '70s asbestos was discontinued in new construction.

Q. Bas of one, one or more so, you're taking away the one, zero. There were just about twice as many -- the frequency was almost twice as great among smokers as among nonsmokers.

And if you go to more advanced levels of asbestosis, in this case two, one or greater, the difference was even more between smokers and nonsmokers. 16 percent of the smokers had this degree of asbestosis, but only 4 percent of the nonsmokers.

MR. SCHROEDER: Okay. We need to change the tape, so why don't we stop right there.

VIDEO TECHNICIAN: We will now go off the record. This concludes tape number two. The time is approximately 3:09 PM.

(A recess transpired.)

VIDEO TECHNICIAN: Back on the record. The time is 3:13 PM. This is tape number three in the deposition of Dr. Albert Miller.

BY MR. SCHROEDER:

Q. Okay. So, Doctor, your conclusion under

section 1 on the 50 percent greater prevalence, is that the same point you are adopting in section 2 of your report?

A. Section 2 of my report deals with --

Q. Is this the section dealing with progression?

A. Yes. It deals with two things. It says increase -- increases likelihood of progression and the frequency of severe asbestosis. Severe asbestosis is a result of progression. And the figures I gave you are for more severe and severe asbestosis.

Q. Okay. The severe asbestosis you're referring to in paragraph two, though, that's as measured by ILO score, correct?

A. Yes.

Q. And that's not as measured by pulmonary function?

A. It's by pulmonary function as well.

Q. No, but what you refer to here on your dichotomy in section 2 is an ILO rating, correct?

A. Yes.

Q. Okay. Now, you understand, Doctor, that

under the matrix used by the trust to decide whether to make a payment, they're using a cut-off of one over zero for the ILO?

A. Yes.

Q. Okay. And if you have anything worse than one over zero as far as an ILO score goes, it's irrelevant to the trust; do you understand that?

A. Yes.

Q. And you also understand that if the trust decides to pay for what's called a category three disease, which is disabling asbestosis, that you then have to meet a pulmonary function element that the trust has, right?

A. Yes.

Q. Okay. So whether or not you have a two over one, two over two or anything worse than that is you understand to be irrelevant under the trust compensation scheme?

A. Yes, unless it's reflected similarly in the pulmonary function.

Q. Okay. All right. And so my question then is: Knowing that the trust uses a one over zero standard for deciding whether to make a payment, that the studies that you point to here don't tell us whether or not any increase in the ILO profusion affects the progression from anything less than one over zero to a one over zero, right?

A. No. Affects the difference between not one over zero and one over zero or greater.

Q. Right. And it's the or greater I'm getting to because it could be a three over three and the trust really doesn't care how much greater it is for purposes of compensation, right?

A. Yes, that's the decision the trust reached, that if you have the commonly used criterion of one over zero or greater, you have radiographic asbestosis. That was a judgment the trust came to.

Q. Okay. And we've already made the determination that whether or not you had one over zero is not in and of itself diagnostic of actual asbestosis under the ATS standards, right?

A. It would require other evidence.

Q. Okay. All right. And now the question is: If the trust were deciding that it would pay somebody with a three over three more money than somebody who had a two over two, then you would want to know whether smoking had any effect from a two over two to a three over three, right?

A. Yes, I could understand that.

Q. Okay. And by the same token, if somebody who has a one over two goes to a one over three, you would want to know if smoking affects that change at

all, right?

A. Yes, because there's no one over three.

Q. All right. Say it goes ten from a one over two to a two over one.

A. Yes.

Q. Okay. So if the question on the table is does smoking affect the compensation decision of the trust of going from a zero over one to a one over zero, even these studies in section two here don't answer that limited question, do they?

A. No, under the scheme used. I didn't confine my report about the interactions of smoking and asbestos exposure to the trust distribution process.

Q. I understand that. That's what I want to ask you about. When we're confined -- I understand what you're saying generally, okay? But I want to ask you a little different question and that's what I'm trying to ask now. When confined, though, to the trust's actual decision-making process, the standards adopted in the TDP, these studies in section 2 here don't answer the question of whether smoking has any effect moving you from a zero, one to a one, zero, right?

A. No, but we dealt with that in the first

UNCERTIFIED DRAFT OF DR. ALBERT MILLER

at great length. And I pointed out that if you use

the category of radiographic evidence of asbestosis as defined by a reading of one, zero or greater as the trust does, you were 50 percent more likely to be in that category if you were a smoker. We came to that statement just a few --

Q. I understand. And, again, my question is now I want you to apply the criteria used by the trust, which is different from --

A. I understand.

Q. -- this, correct? And when applying the limited criteria used by the trust, if the trust makes the decision that it will pay based on a one over zero or more, you can't tell us to a reasonable degree of medical certainty whether smoking has an effect under any of these studies that would move you from a zero, one to a one -- just to a one, zero; isn't that correct?

A. I think that's an artificial distinction. I think if the distinction is do you cross the line or you don't cross the line, we have data on that. Do you cross the line by this much or that much we don't have data on.

Q. Well, but that's not what these studies are really saying, is it? These studies are not

saying do you cross the line by that much, these studies are saying among people with an ILO rating of one over zero or greater, here's what we're finding?

A. No, it's just the opposite. We're saying

that if you take all people, all workers exposed in the same trade over the same period of years and you compare those who smoke with those who didn't smoke, you are more likely to wind up having crossed the line if you smoked. And that degree of greater likelihood was 50 percent.

Q. Including everybody who's crossed the line?

A. They cross the line a little bit or a lot, but they cross the line from this side to that side. I think that's very clear.

Q. That's going from a one, zero to -- from nothing to a one, zero; is that right?

A. That's going from if you say zero, one and zero, zero or nothing, they became something.

Q. Okay. And what percentage in your opinion is that number that go from nothing to a one, zero?

A. You're 50 percent more likely to be in the something category if you're a smoker.

Q. That conclusion that you are 50 percent

more likely is something that was available then at least as of 1991 in the Lilis study; is that right?

A. Yes.

Q. Okay. Now, what about going from a one over zero to a one over one or greater?

A. I don't have information on that.

Q. Okay. Doctor, I want to hand you what's been -- let's mark this as exhibit number 5.

(DFT. EXH. 5, document entitled In Re Joint E. & S. Dist. Asbestos Litigation, with attachments, was marked for identification.)

BY MR. SCHROEDER:

Q. Doctor, exhibit number 5 is a copy of the trust distribution plan, correct?

A. Yep.

Q. And this is a copy from your folder that you had marked up, right?

A. Yes.

Q. Okay. Now, let's take a look first of all with bilateral pleural disease. Would you agree with me, Doctor, that you can't say to a reasonable degree of medical certainty that smoking has any effect on the occurrence of pleural disease?

A. Mr. Schroeder, I could agree with you.

Q. And then now let's talk about category two, which is nondisabling bilateral interstitial lung disease. Do you see that?

A. Yes.

Q. Okay. Category two has criteria set by the trust of a medical report stating a causal relationship between asbestos and bilateral interstitial lung disease, right?

A. Yes.

Q. And some documentation of the presence of unilateral or bilateral pleural disease -- or, I'm sorry, documentation of unilateral or bilateral pleural disease accompanying the bilateral interstitial lung disease, right?

A. Yes.

Q. And a ten-year latency period?

A. Yes.

Q. Okay. First of all, let's talk of the latency period. The ten-year period is certainly less than the 15-year period that the ATS recommends in this day and age, correct?

A. Yes, but many of the cases the trust was dealing with went back more than this day and age.

Q. I understand. As a consequence of going to a 10-year period from 15, though, when you're

dealing with hundreds of thousands of claims, you're going to go pick up more claims by doing that, aren't you?

A. I guess. I don't know how many more, but you have the potential for picking up some more.

Q. Okay. Now, category two under the trust TDP is not asbestosis, is it? In other words, these aren't all the standards necessary to make a clinical diagnosis of asbestosis, are they?

A. Well, one of the category A under that says there must be a medical report. The medical

report I presume comes from a physician, at which the physician concludes that there is a causal relationship between asbestos exposure and bilateral interstitial lung disease. So a physician now has diagnosed asbestosis.

Q. But there's nothing in here that says that that diagnosis is made under the American Thoracic Society standards, is there?

A. It doesn't say what standards the physician used.

Q. Okay. Category -- so the answer is no, right?

MR. WESTBROOK: Answer to what, counsel?

A. Answer to what question?

BY MR. SCHROEDER:

Q. To my question. There's no indication here that category two under the TDP requires the application of the American Thoracic Society standards to determine whether it's asbestosis?

A. It doesn't state you must use those standards.

Q. Okay.

A. I must point out in this, because this has come up in my teaching of this matter to my own trainees, that when it comes to these four criteria the ATS says we regard the following clinical criteria to be of recognized value. It doesn't say that you have to have all four of them. In fact,

it's very unlikely that all four. It just says you should take these into consideration as being of recognized value.

Q. Category two doesn't say to take any of those into consideration?

A. No, category two does not say that.

Q. So in that regard it is not -- category two is not requiring application of the American Thoracic Society standards, correct?

A. It doesn't tell the physician which standards to use.

Q. Okay. And you know, don't you, that the category two TDP standard uses a one over zero cut-off on the ILO, right?

A. Yes.

Q. So category two requires that the claimant document bilateral interstitial lung disease diagnosed on the basis of, among other things, an X-ray, right?

A. Um-hum.

Q. And that X-ray can be a one over zero, right?

A. Yes.

Q. And we've already established that the one over zero has the alternate reading of a normal X-ray, right?

A. Yes.

Q. And that -- well, strike that. You've got here a question mark by your one over zero. What does that mean?

A. It meant it didn't state in this part. I had to go fishing to the rest of this rather tedious document to find what they meant.

Q. Okay. And the one over zero used by the TDP here is less than the one over one under the criteria set under the ATS, correct?

A. Yes, but it is consistent with many other criteria set, including by the American -- the National Institute of Occupational Safety and Health, NIOSH, in its official reading sheet for B-reader to use, has a category zero, zero, zero, one and then has a category -- has all the other categories separated from those.

Q. I understand that, Doctor.

A. So the criteria -- what I'm simply saying is that the one, zero standard may not be the same as the ATS but is consistent with other authoritative standards.

Q. Even NIOSH recognizes, though, at a one, zero level that you have the alternative of having otherwise normal X-ray, right?

A. Your best judgment is that it is not normal and, however, you did consider it being -- as an alternative which you rejected that it could be normal.

Q. All right. And you can't rule out normal?

A. Well, if you couldn't -- you considered it, but ruled it out.

Q. So if one were to apply the American Thoracic Society standards to the diagnosis of

disease, category two under the TDP would not meet the ATS standards for asbestosis, correct?

A. It would not meet the radiographic standards. It does not -- I think this section, it does somewhat later on deal with the other standards. It deals with the other criteria for demonstrating disabling lung disease.

Q. And we'll deal -- that's a separate category now and I want to focus now just on category two. Category two is not in and of itself a disease, is it?

A. It is not in and itself?

Q. It's a compensation scheme agreed to by compromise between claimants to the trust and the trust, right?

A. I don't know by what mechanism it was arrived at, who was in the negotiations. It is consistent with many standards in use. I think it's a reasonable standard, if that's your question to me, which it may not be.

Q. Would you diagnose your patients for

asbestosis based on the limited information available under category two here?

A. I would want to use additional information.

Q. All right. And so the answer would be no, you wouldn't diagnose based on this limited information, correct?

A. I would not base my diagnosis only on this definition.

Q. All right. Thank you. By the way, Doctor, do you require a pulmonary function deficit below normal limit in order to reach a conclusion of asbestosis?

A. No. You could have asbestosis without a functional deficit and you could have asbestosis without a reading even of one, zero.

Q. If you're going to base your conclusion solely on -- let me strike that.

Would you base a conclusion of asbestosis solely on exposure history, latency and X-ray?

A. If the X-ray is -- yes, to make a diagnosis -- a positive diagnosis, you could make a positive diagnosis on the basis of X-ray exposure at latency if the X-ray is positive.

Q. Okay.

A. You cannot exclude it if the X-ray is negative.

Q. And what X-ray ILO reading would you

require for it to be sufficient for a diagnosis of asbestosis?

A. In my own practice on individuals, and there has to be a distinction made between a physician when he's dealing with an individual as opposed to dealing with a number of -- in a group for an individual to label that individual as asbestosis in the absence of any other information, which is a very unusual situation dealing with an individual.

Q. I understand.

A. With an individual, you have the opportunity to pursue other results. I would use one, one.

Q. All right. Category three under the TDP. Category three do you agree has the same standards as category two but requires in addition a documentation of disability or impairment under pulmonary function tests?

A. Yes.

Q. And that pulmonary function impairment is less than 80 percent of total lung capacity, otherwise known as TLC, forced vital capacity, FVC, or diffusing capacity, DLCO, correct?

A. Right.

Q. Now you've got a question here. What do you have written in the margin there on the top of

the second page at the top?

A. It is not a question, it's a comment. And there's a line going to the 80 percent of predicted and I said -- I simply finished the sentence that they didn't finish. It said of less than 80 percent. It didn't say why. And I simply wrote in of predicted normal. So I was doing an editorial job. I guess it was not well edited in the first place.

Q. Okay. Is there anything in this document that tells you what the normal is to be defined as?

A. Yes, which predicted values to use?

Q. Yes.

A. No, it does not.

Q. Okay. And do you understand that the trust has no standard for which predicted normal group must be used for application of the standard?

A. I don't have that knowledge of how the trust operates.

Q. Okay. Now, what is your opinion, Doctor, on how to measure pulmonary function of an asbestosis claimant so that you avoid any question of confounding for smoking?

A. I think that's a very serious and important question. I think we could address it for

diffusing capacity, as we discussed earlier today, by using smoking adjusted predicted values. We know that normal people who smoke just because of their smoking have a lower diffusing capacity. And, therefore, you could use that difference to adjust.

So I'll give you an example in numbers, if that -- a 40-year-old man has a predicted diffusing capacity as a nonsmoker of 35. It would roughly be 30 if he smoked. And I would use that 30 as the comparison for whatever his test result is.

Q. Okay. If you had been hired by the trust when you made your application that you told us about earlier for a potential position to advise on the medical panel and -- well, if you had been hired by them at that time, would you have made a recommendation to the trust that they adopt some kind of smoking adjusted rate for diffusing capacity if they wanted to look at diffusing capacity?

A. I certainly would have. That wasn't the position I applied for. That position was to review individual claims as a kind of super referee, I guess, when there was -- that was the position they solicited people to apply for. I was never asked to be a member of whatever committee set up these criteria in the first place. I would very likely --

I would very much have liked to be such a member. And I certainly would have insisted, I may not have

prevailed, that smoking be considered in the prediction of the effects of asbestos.

Q. Okay. What about forced vital capacity, would you have made any recommendations on how to interpret forced vital capacity pulmonary function readings so as to be able to exclude any potential confounding for smoking?

A. Using similar analysis, similar reasoning, we look at the difference in forced vital capacity between normal smokers and normal nonsmokers and we did not find the difference. So I would not be able to adjust for the effect of smoking because in normal people vital capacity was not affected by smoking.

Q. How about total lung capacity?

A. Total lung capacity I did not study.

Q. Okay. All right. Would you agree with me, Doctor, that total lung capacity is the full amount of air that your lung can hold? Is that accurate?

A. It is maximum inhalation.

Q. All right. And total lung capacity is made up of two components, forced vital capacity and

residual volume?

A. Yes.

Q. So that if you have an -- well, let me put it this way. If there's some concern that measuring forced vital capacity might confound

smoking, that if you measured residual volume you then could account for that? Would you agree with that?

A. It would give you more information.

Q. Okay. And, therefore, you could make an adjustment based on the residual volume which may be attributable to either smoking or some other obstructive process, right?

A. Yes. Well, the residual volume is affected by asbestos as well, but in an opposite direction.

Q. Okay. So, if anything, if you rely on the residual volume, you may be overstating the effect of smoking; is that a fair statement?

A. If you look at residual volume, you may have a cancellation of the effects of either -- of both. And you would then say, gee, this is a normal value when you had abnormalities that moved in opposite direction.

Q. Okay. But that could be measured then by

looking at whether your total lung capacity was reduced, right?

A. Which is another way of saying that could be looked at by looking at the vital capacity alone.

Q. Yes. Right?

A. To some extent, yes.

Q. Okay. So the tools are available and

were available in order to try to ferret out any potential smoking effect on category three diseases, right?

A. I don't know whether that's true because as I review cases that are submitted to me for my evaluation, measurements of residual volume and of total lung capacity are less frequently performed or available in the general community than the other measurements, so you may not have that information.

Q. But you have -- you have a variety of potential tools, right? First of all, you can require if you want to either TLC or residual volume if you want to, right?

A. You could require it. It may mean that the -- I think -- I don't know whether the claim deals with deceased individuals. It certainly must deal with disabled individuals. And it's difficult to insist on certain tests being done if they're not

readily available in the community.

Q. Well, you perform in your office total lung capacity tests, don't you?

A. No. These are not done in doctors' offices.

Q. Where are these done?

A. What can be done in a pulmonologist's office is a vital capacity FEV1. That's called spirometry.

Q. Right.

A. The other tests, including the diffusing capacity, are most often done at a large clinic or a hospital. And I refer my patients across the street to the hospital for those tests.

Q. Okay. My point simply is that if you want a total lung capacity test or a residual volume, they can be done at hospitals in the country, correct?

A. Yes, but --

Q. All right. And that if -- if the trust had adopted -- or put it this way. If the trust had adopted your analysis based on either -- well, based on DLCO, then the trust could have been that way accounted for smoking effect, right?

A. Yes.

Q. And do I understand your testimony to be that there's no smoking effect on forced vital capacity?

A. In normal people.

Q. What do you mean by that?

A. In people who have no exposure, I just find this group, this is again based on our testing of several thousand people in Michigan. If you have not been occupationally exposed to a hazardous material, if you are free of evidence of lung disease, you have the same vital capacity whether you smoke or not.

Q. Okay. All right. And what about among --

A. If you have a disease caused by smoking like any number of diseases, that's not true. But if you are free of any evidence of disease and smoke, then your vital capacity is the same.

Q. Okay. Among the claimants to the trust, if they are a claimant exposed to asbestos and also smoke, is it your opinion whether they would -- that they would have or would not have any smoking effect on their forced vital capacity?

A. Well, I address that question at great length in my report. And there certainly is

information about it. And there's no question that if you smoke and you were exposed to asbestos as an insulator, because that's the only direct experience I have, even though you have the same exposure and the same degree of asbestosis on the X-ray or no asbestosis on the X-ray, your vital capacity is significantly lower as a smoker. And that's in --

Q. Well, you say significantly. It's your opinion then it's 4.7 percent different, right?

A. Well, it's statistically significant. That's what the word means.

Q. Well, a 1 percent difference would be different from a hundred percent difference, right?

A. A 1 percent difference would be --

Q. Whether something's significant, whether

something's statistically significant might be two different things, you would agree with me with that?

A. You are using the word significant in two other ways. I tried to make the distinction between a physician clinically significant and statistically significant. And, yes, something could be statistically significant and not be clinically significant. In this case, the difference of 4.7 percent is both.

Q. Okay. Let's talk about that next section

of your report then. You reach an opinion in section 3 under section 4 A that smoking increases the degree of impairment in lung function of similarly exposed workers with the same degree of radiographic, and you say asbestosis. Can we agree that what that means is parenchymal abnormalities?

A. Yes.

Q. Okay. And it's your opinion --

A. And I define that as saying they had the same ILO score.

Q. Okay. Right. And so it's your opinion that the difference is 4.7 percent, correct?

A. The overall difference is 4.7 percent if you took all scores, but it was fairly consistent among all the scores. And that's shown in the paper I referred to, which I have a copy of here.

Q. Okay. Let's take a look at that number,

if we can. You are referring here to your studies Miller '92 and Miller '94, right?

A. This is specifically Miller '92.

Q. Okay. And does that mean this was published in 1992 then?

A. Yes.

Q. And made available to the world at that point, right?

A. Yes.

Q. Okay. To make sure we understand this, if you would take a look at table one of that study, which is on page 264. Are we on the right page?

A. Yes.

Q. What we're looking at here -- and I tell you what, let's mark a copy of this for the record.

(DFT. EXH. 6A, article entitled Relationship Of Pulmonary Function to Radiographic Interstitial Fibrosis in 2,611 Long-term Asbestos Insulators, was marked for identification.)

BY MR. SCHROEDER:

Q. Dr. Miller, I'm going to hand you what's been marked as exhibit number 6 and ask you if you would identify this.

A. I have a copy.

Q. Just for the record, is that the same? That's the 1992?

A. The very same one, yes.

Q. All right. That's the 1992 study?
A. Yes.
Q. All right. If you flip to page 264, table 1. The conclusion in your report is drawn from table 1, correct?

A. No, it's drawn in part from table 1.
Q. Okay. And the 4.7 percent difference is from the line that's noted about one, two, three, four -- six lines down, FVC, percent of predicted, right?
A. Yes.
Q. So what you find in your study is never smokers have an 86.5 FVC based on percent predicted whereas anybody with any smoking history has an 81.8 percent FVC?
A. Yes.
Q. Okay. And then you provide standard deviation, right?
A. Yes.
Q. And standard deviation for both of those is 16.6?
A. Yes.
Q. So just to be sure then, does that mean that the 86.5 that you find for never smokers has a confidence range of 69.9 to 113.1, which would be 16.6 on both sides?
A. Yes.

Q. All right. And the definition of a confidence interval is that range within which a true value may fall, right?

A. Yes.

Q. And so the same question then on the positive smoking history. You have an 81.8 mean with a confidence interval of 65.2 to 98.4, right?

A. Yes.

Q. Since these numbers go more than a hundred, you could have more than a hundred percent predicted in your FVC, right?

A. Yes.

Q. Okay. And so where you get your 4.7 percent is the difference between the 86.5 and 81.8?

A. That's for the entire group, right.

Q. Okay. Now, you concluded in this study that differences in FVC between zero, one and one, zero ILO category were not statistically significant given smoking category, right?

A. You're making the comparison between zero, zero and zero, one?

Q. Zero, one and one, zero on page 266 about five lines down. Isn't it true that the differences in FVC between zero, one and one, zero were not significant?

A. Yes.

Q. In the smoking category?

A. Yes. Yes.

Q. So getting back to the questions we asked earlier about whether smoking made a difference from zero, one to one, zero when measured by FVC. Your conclusion is there's no smoking difference in pulmonary function testing, right?

A. Yes.

Q. And then if you look at figure six on page 267, which is the box in the upper right-hand corner.

A. Yes.

Q. Isn't it fair to say that the conclusion to be drawn from this is that whether or not you have pleural thickening is more important an indicator in your FVC than whether you smoke?

A. From figure six?

Q. Yes.

A. Is that pleural thickening has a greater effect than smoking?

Q. Yes.

A. Yes.

Q. And pleural thickening is caused by asbestos?

A. Yes.

Q. Among other things, right?

A. Yes.

Q. Pleural thickening is not caused by smoking, is it?

A. No. Not in my opinion. People seem to disagree with me. They have that absolute right, but I don't think so.

Q. Okay. If you were to take table 1 and split those people looking at the FVC line and split those people into those with pleural thickening and those without pleural thickening, you might then find that there's no difference between smokers and nonsmokers, correct?

A. I don't believe so. Table 1 shows the difference between smokers and nonsmokers looking at the entire study population.

Q. It's not controlled for pleural thickening, though, is it?

A. It's not controlled for pleural thickening. The -- we've already agreed that smoking doesn't affect pleural thickening, so there really is no basis for making that adjustment.

Q. Well, in fact, though, Doctor, if there is no relationship between smoking and pleural thickening, that would be even better reason to look at the difference between never smokers and their characteristics and those with a positive smoking

history and their characteristics, including pleural

thickening, to see whether or not it's the pleural thickening that's affecting this 4.7 percent procedure?

A. Right. Since we're talking about hundreds, thousands of people, if something does not have an effect, you've established that by one analysis, I don't see that it's necessary to look for that effect in another analysis. If we are showing that pleural changes unrelated to smoking, then pleural change would not explain the difference between smokers and nonsmokers.

Q. Well, isn't it possible, Doctor, that when looking at FVC -- which is affected by pleural thickening, right?

A. Yes.

Q. When looking at the differences between FVC on table 1, it's possible that those with a positive smoking history happen to have longer exposure and, therefore, more pleural thickening? That's possible, isn't it?

A. We addressed the question of their duration and the -- there was a no difference -- no statistically significant difference, very negligible difference in exposure between the smokers and the

nonsmokers. In fact, the nonsmokers were longer since they first were exposed to asbestos.

So if you're telling me that they would

be more likely to have pleural disease because they were exposed longer, that would be truer of the nonsmokers. But basically there is no difference in their duration of exposure.

Q. Your table 1 does not account for pleural thickening as a recognized factor in whether -- or rather a recognized factor in your FVC, does it?

A. No, because it's addressing a different question. It's addressing the difference between smokers and nonsmokers. It's not addressing the effect of the pleural thickening, which is addressed in the next table, table two.

Q. Have you adjusted the figures in table 1 for FVC for pleural thickening in your analysis anywhere?

A. No.

Q. The 4.7 figure you come up with is an average, right?

A. It's an average based on all the workers, but figure 4 on page 267 looks at the difference between smokers and nonsmokers at each of the ILO categories shown. And it's fairly consistent across

that spectrum. Smokers uniformly have lower vital capacities at each of the categories with the possible exception again of the most severe category.

Q. Where do you report in here the actual differences, Doctor, at each of these bar graph

levels? Are they reported at all?

A. If you look at the last line on page 265, it says figure 4 shows the relationship between FVC and profusion score in nonsmokers and those with a positive smoking history. It does not further comment on what is shown in the table.

Q. Okay. So you don't have any actual values for these charts here?

A. The values are there. The computer which generated these bar graphs shows quite accurately the values in each of those bars. So you could take any measuring device, calipers, rulers or whatever, and look at the individual differences at each of those ILO classifications.

Q. To make sure we understand this chart then on figure 4 on page 267. If you look at the column that says one over zero, do you see that, the third column over?

A. Yeah.

Q. All right. The white graph reflects the percent predicted for nonsmokers, right?

A. Right.

Q. And the shaded graph is percent predicted for smokers, right?

A. Yes.

Q. And in both cases the average is about roughly 95 percent or a little more, right?

A. The averages --

Q. These are reporting the averages, right?

A. Yes. So the average is about close to the 85, not 95. If you look at the --

Q. Okay. I'm sorry, you're right. 85 percent. In either case, even the smokers have about an 85 percent predicted, right?

A. Yes.

Q. So if the trust is paying somebody based on a one over zero ILO rating, the average here is still well above 80 percent, right?

A. The average for either one of them. Either smoking category is above 80 percent, which is highly abnormal. The average for a normal group, a normal population, would be around a hundred percent. So the fact that they're in the 80s, and I might point out that even those who had no evidence

of disease on the X-ray, even if they were nonsmokers, only had 90 percent of predicted.

Q. If you've adopted a compensation scheme, though, that's tied 80 percent of predicted, your folks here in your chart are still above 80 percent?

A. No. No. You have to make a very clear distinction between mean values for a group of people and a value for an individual. This is probably the most critical mistake made in evaluating numerical values. For an individual, 90 percent of predicted is most likely within the normal range of the test

result. For a group of people, it is highly abnormal. It says on the average this group of people is 10 percent worse than it should be. So they have to be interpreted correctly. And what this tells me is even if you don't smoke and even if your X-ray is read as clearly normal, you still have effects of your asbestos on your lungs.

Q. Okay.

A. And if you smoke, that -- and your X-rays are normal, the effect is even greater.

Q. To pick up on what you said, you would be applying an average from this study to any particular claimant?

A. Yes. Yes.

Q. And you were cautioning us against doing that as I understand your testimony?

A. Well, the only way you could -- what we're talking about is not how we would judge an individual. We're saying what is the overall impact on the compensation scheme or pay-outs. And that overall impact is I believe 4.7 percent. It may not apply to an individual, it may be 12 percent of one individual and no percent in another. That's in the nature of statistics.

Q. All right. So without looking at the individuals in the claimant population of the trust, then you can't give us an opinion to a reasonable

degree of scientific certainty as to exactly what that difference would be, if any, for smoking; is that a fair statement?

A. I could only speak about the entire group.

Q. Okay. All right. But you haven't looked at anybody in the group, have you?

A. I have looked -- I could take any one in the group, but I wouldn't know what his measurements mean as far as how to tell how much is smoking and how much is asbestos.

Q. Okay. And in order to attempt to apply

the 4.7 percent that you opine on in your report to the trust claimants, you would have to actually look at the claimants individually to determine whether or not any of them actually fall within ranges where you would apply in your difference, right?

A. My suggestion is that you take this 4.7 percent and say that that -- that difference between all smokers and all nonsmokers should be used as a rule of thumb as a guideline to looking at each individual, knowing that in some you may be overcompensating and some you may be not compensating enough.

Q. Okay. If they were an individual case and I had one claimant only, you wouldn't apply the 4.7 percent to that one claimant, would you?

A. I would apply it to see how much more

impaired he was due to smoking because it's the best way I have of making that assessment.

Q. All right. At a minimum, if one were concerned about whether smoking had an effect on FVC, your 1992 study then provides a basis for one to take a reduction of 4.7 percent across a group of people for any potential smoking effect, right?

A. A group of people exposed to asbestos at the same time that they smoked.

Q. Okay. And if they smoke after they were exposed to asbestos, is that a different -- that's a different conclusion?

A. No, I don't think I could -- I mean, first of all, that's unlikely to happen. Most people during their working lives is when they smoke. I'm saying that in a normal person, and we've dealt with that, normal groups, we don't see a difference in forced vital capacity between smokers and nonsmokers. So there's something in the interaction between asbestos and cigarettes that brings this out.

Q. Let's mark as exhibit number 6 your next 1994 study.

A. Before you get into that, I would appreciate using the --

Q. Okay, why don't we take a quick break.

VIDEO TECHNICIAN: We will now go off the

record. The time is approximately 4:13 PM.

(A recess transpired.)

(DFT. EXH. 6B, article entitled Spirometric Impairments in Long-term Insulators, was marked for identification.)

VIDEO TECHNICIAN: Back on the record.

The time is 4:25 PM.

BY MR. SCHROEDER:

Q. Dr. Miller, in your report you state that there is what you use the phrase broad evidence, close quote, as to your opinions one, two and three. Do you see that?

A. Yes.

Q. You would agree that there's conflicting evidence on these points, wouldn't you?

A. I don't think that the statement about broad evidence concerning the frequency of radiographically detectable asbestosis is misstated. There may be papers -- generally papers on smaller numbers of workers, very small numbers of workers that didn't find it, but many papers found it. And the more -- the better the study, the more the statistical power of the study, the more likely it was to be positive. So I think that that's true.

Q. Isn't it true, Doctor, that the more recent regression analyses show little, if any, smoking effect among asbestosis victims?

A. The more recent ones?

Q. Yes, the more recent regression analyses looking at that issue than when adjusting for other confounders found little, if any, smoking effect?

A. Well, I think we went through many of these and --

Q. Would you agree with that?

A. No, I would not.

Q. Doctor, if you look at page 7 of your report. Under section 8 there you have the statement that the trust awards, quote, impairment, close quote. What do you mean by that?

A. I believe that's the title of this category three. They call it disabling. I called it interstitial lung disease with impairment.

Q. Okay. You would agree that persons with less than 80 percent of predicted FVC may have no discernible symptoms?

A. That's true.

Q. And that persons with less than 80 percent DLCO may have no discernible symptoms?

A. That's true.

Q. And the same with total lung capacities?

A. Included.

Q. Do you have an opinion as to whether 80 percent of predicted is a recommended or appropriate standard?

A. I've already been asked that question it seems like several weeks ago, earlier this morning,

and I said I use and advocate the use of the 95 percent confidence lower limit rather than a general rule of 80 percent.

Q. Okay. By using a rule of 80 percent, that's an arbitrary figure?

A. Yes.

Q. And by using 80 percent, one might pick up folks who may have no pulmonary function deficit as compared to your Michigan study, for example?

A. Well, my Michigan study raises a question of who's -- or which predicted values to use, whichever predicted values you use. I would advocate using for 95 percent confidence lower limit regardless of the source of the predicted values. Those are two separate issues.

Q. Will that result -- if you use the 95 percent confidence limit under your analyses, will that result in finding more or fewer disabled persons than using the 80 percent of predicted?

A. That could be determined. I could not state that in advance because it could work in both directions. There are some situations in which you could be above 80 percent of predicted and be abnormal by the 95 percent confidence interval or the other way around. You could be below 80 percent and

still be normal. So it works both ways. But from the information available to the trust on each claimant, you could see each definition.

Q. Okay. Have you made any attempt to discern that in the claimant population of the trust?

A. I don't have any information about the claimants.

Q. Okay. You had said earlier, Doctor, that you thought it would have been a good idea for the trust to have had what you called I think a super referee. Do you remember that?

A. No, no, that's what I -- that's what this position which I applied to be was. My interpretation of what that position was, was to be a referee when there was disagreement among assessments of an individual claimant. And I received a letter from the trust, as did many people I knew, asking whether I was interested and, if so, would I fill out this application. I didn't solicit it. And I filled out the application indicating my interest and, as I told you, I heard nothing further.

Q. Wouldn't it have been a good thing for the trust to have filled that position?

A. I think they filled it, but they didn't fill it with me.

Q. Had they filled it with you, any claim of potential confounding by smoking could have been addressed based on your very studies, right?

A. Well, I don't think that was the role that this letter went out to the pulmonary community. It was on an individual claimant as well as I could understand it, that perhaps one evaluator found no disease and another one found disease or one found no disability and the other found disability.

Q. Okay. All right.

A. It was for individuals, not to input into how the mechanism worked.

Q. Let me show you what's been marked as exhibit number 6. Do we have that right? Is that your '94 study?

A. Yes.

Q. If you take a look at page 177 of that study at the top right column. Do you see that where you conclude differences in all pulmonary function measurements shown? Do you see that sentence?

A. Yes.

Q. At the last clause of that you say when current smokers are compared with ex-smokers, you found no statistically significant difference when FVC of percent predicted was used as a basis, right?

A. When you compared current smokers versus ex-smokers, there was no difference in FVC, yes.

Q. All right. And one of the problems I think we had with these -- with this study is -- and with the 1992 study is you were looking at a survivor cohort, weren't you?

A. Well, the study was based on the same cohort.

Q. Correct. And that's why I say that's a problem you had with both of them, is that you were dealing with a survivor cohort, right?

A. Yes. The only way you could study living people is by having survivors.

Q. Right. And for the reasons you identified earlier for us, when you look at survivors your analysis may be somewhat skewed because you don't have in that group all the other people exposed who have dropped out of the study, right?

A. Yes.

Q. And in this study you only had 40 percent participation from the cohort, right?

A. It says, the first page, 175, next to last sentence, approximately 55 percent of the surviving cohort were examined in 19 cities between 1981 and 1983, which is really a remarkably large

response considering that these people lived all over the continent and had to get to an examining center.

Q. But of the people examined then, complete data were not available on all, were they?

A. Some of them, as is inevitable, were not -- did not complete every part of a very complicated examination.

Q. Okay. So the answer is yes, right?

A. About the 40 percent with the --

Q. Yeah, once you consider the 55 percent and those who actually had enough -- gave you enough data to look at, you were looking at approximately 40 percent of your cohort, right?

A. You may have done that analysis. We lost a little less than 300 of the 29 odd hundred, which I don't think would change it from 55 to 40 percent. My --

Q. Would you agree that at least roughly half of them?

A. Half of the workers we would have ideally liked to see were not studied.

Q. Okay.

A. We were very pleased with getting 50 percent.

Q. But my question then, sir, is that since

you're only studying half of the people actually exposed, that if you were to have had the other half available to study, that any perceived difference between smokers and nonsmokers on FVC might have been eliminated? That's a possibility, isn't it?

A. I don't think so. I think the group was large enough that the -- what we observed would have

held up. But since I cannot answer that question, I could only say I don't believe so.

Q. You wouldn't be able to say to any reasonable degree of scientific certainty that, in fact, there would be no difference?

A. Could I rule out entirely that if we had studied the other 50 percent we wouldn't see the differences we saw? I don't believe that that's the case. Could I rule it out by showing you some magical statistic? No.

Q. Okay. If you look at section B on page 7 of your report, you make a recommendation that you could calculate the impairment as defined under the TDP as a reduction in FVC and/or reduction in diffusing capacity based on any potential effect of smoking, right?

A. Yes.

Q. And what you recommend is you take the

number of claimants with reduced FVC and/or DL who have also increased FEV1 and FVC less than 70 and then you determine that from the claimants; is that right?

A. I said that you take those people who have -- yes.

Q. Okay.

A. Yes.

Q. Do you know whether, in fact, the

information necessary to conduct that analysis is even available in the trust claimant files?

A. It should be.

Q. Why do you say that?

A. Because if they have -- I imagine there are individual claimants who did not do pulmonary function tests or who were receiving awards for cancer or mesothelioma where these considerations wouldn't apply, but I -- most, if not all, of the recipients of awards for disabling asbestosis have -- should have pulmonary function tests. If they have pulmonary function tests, this information should be available.

Q. Okay. And so in your opinion this is the kind of information the trust should have required of the claimants, right?

A. I believe it would have been reasonable to do so, yes.

Q. Do you have any idea what the number is if you run that calculation in paragraph B?

A. No, I don't know anything about what the test results were in the trust population.

Q. All right. Give me just a minute, change topics here for a minute. Doctor, would you agree with me that an ILO rating of one over zero does not by itself distinguish between small, irregular opacities and small, rounded opacities?

A. No. No, that I don't agree with. The

reading, whatever the reading is, whether it's one over zero or zero over one or two over two is applied to the type of opacity.

Q. Right.

A. So --

Q. So it doesn't -- it does not distinguish between whether it's small or rounded; is that correct?

A. No, because you're supposed to state before that reading what the type of opacity is. You first classify it by type and then by profusion.

Q. Okay. Do you agree that the FEV1 over FVC ratio tends to decrease with age, that is, the

older you get --

A. Yes.

Q. -- the lower?

A. Yes.

Q. If you were looking at pulmonary function as a function of whether somebody has asbestosis, which tests would you require to show impairment?

A. Using pulmonary function to diagnose asbestosis in the absence of radiographic evidence or in the presence of radiographic evidence?

Q. Either way. Let's start with the presence of radiographic evidence.

A. If I already made a radiographic diagnosis of asbestosis, I would use the tests that

have been mentioned here.

Q. Okay. And would you use all three of them?

A. I would not necessarily insist on the total lung capacity and the residual volume.

Q. Okay.

A. If I were using pulmonary function test to diagnose asbestosis in the absence of radiographic evidence, I would use these tests and additional tests as well.

Q. And what additional tests would you use?

A. If these tests are negative and the X-ray is negative and I had a patient who had symptoms and exposure, I would do pulmonary stress tests in the same way that we do cardiac stress tests and I would measure lung function during exercise. That's a relatively unusual situation.

Q. Let's mark this next exhibit.

(DFT. EXH. 7, letter dated 9/3/96 to Julie Davis from David T. Austem, was marked for identification.)

BY MR. SCHROEDER:

Q. Doctor, I'm going to hand you what's been marked as exhibit number 7. Have you seen this letter before? It's a letter from David Austem from the Manville Trust to Julie Davis at Caplin & Drysdale.

A. I've never seen this letter.

Q. Okay. If you would, I'm going to ask you a few questions about this letter. Do you want a minute to read it?

A. Well, I have to point out that it's three and a half single-spaced pages of extremely small font. Must be equivalent to six or seven pages of regular typed script. I'll be happy to read it if you guys want to sit here while I do so.

Q. You can talk to Mr. Austem about the font size. Let me ask you some questions if I can direct your attention to it. And if you can read it in context and then if you want to take a break, we'll read it as well.

A. Let me get some idea what he's --

Q. Okay.

MR. SCHROEDER: Why don't we stop the tape just for a minute.

VIDEO TECHNICIAN: Go off the record. The time is 4:47 PM.

(A recess transpired.)

VIDEO TECHNICIAN: Back on the record. The time is 4:50 PM.

BY MR. SCHROEDER:

Q. Dr. Miller, you've now reviewed exhibit number 8 -- 7. Exhibit number 7, which is the letter from Mr. Austem, right?

A. Yes. I haven't read it word for word,

but I have some insight into what the problems are that he's pointing out.

Q. Okay. Are you ready to talk about it then?

A. As ready as I'm going to be after eight hours of testifying today.

Q. Okay. All right, Doctor, let's take a look at the letter. You understand that at the time this letter was written, the trust was attempting to change the standards it was using for the compensation for asbestosis, right?

A. No, I'm not familiar with any of these deliberations of the trust.

Q. Okay. Let's take a look at -- I'm sorry, you can tell from the import of the letter that that's what's going on, right?

A. I can tell that there have been problems raised about individual test results and some general problems in interpretation.

Q. Okay. On page 2 of the letter, the first paragraph, Mr. Austem is expressing concerns about discrepancies with respect to the expected PFT scores for unimpaired, right?

A. Yes.

Q. And that's what we talked about earlier when you referred to your Michigan group, right?

A. Yes.

Q. And, in fact, one of the experts that's

used for PFT modeling is an expert, according to Mr. Austem, to whom Owens-Corning has sent claims dealing with PFT analysis, right?

A. I don't know if that's what I -- they talk about they sent the claims to this expert, and I presume he used the predicted values that are being referred to.

Q. And those predicted values were those based on a Salt Lake City, Utah group of unimpaired persons, right?

A. Yes. That's the group I've referred to already. The author of that study is Dr. Crapo. And the results in these subjects who not only adhered to all the scriptures of the Church of Jesus Christ of Latter Day Saints, they also and therefore didn't drink or smoke and intended to live a very healthy life-style --

Q. And you would regard them not to be an appropriate comparison group for purposes of PFT?

A. For reasons really more than that. This letter from Mr. Austem points that out. There are additional reasons why many others besides myself, and I also don't consider this an ideal reference population. Salt Lake City and the other communities included are all at altitude, and that will affect your development of your lung.

Q. As a general proposition, comparing

claimants of the Manville Trust to that as an unimpaired group, that Salt Lake City group will result in more claimants being found to have been disabled, right?

A. Yes.

Q. Okay.

A. And, also, it's a very limited ethnic group compared to the general population. It doesn't generally include people from southern, central and eastern Europe, which are a large portion of the work force.

Q. Okay.

A. So I -- I do not use and do not advocate the use of those predicted values.

Q. Mr. Austem concludes in the second paragraph that by using the Salt Lake City model, you would get what he calls badly skewed results. Do you agree with him?

A. Yes, because the values are quite high and individuals will show up as 70 or 65 percent of predicted, whereas using other predicted values they might be 85 percent of predicted.

Q. All right. And Mr. Austem in the fourth paragraph expresses concern about facilities failing to follow the ATS PFT standards. Do you see that?

A. Yes, for the performance of the tests.

Q. That's right. Would you agree with Mr. Austem that the facilities should be filing ATS standards for PFT testing?

A. Yes.

Q. And that failure to follow those standards may result in additional claims being filed against the trust?

A. Yes, because pulmonary function tests are the expression of a maximum effort. Anything less than a maximum effort will be a lower value. There are patients who because of their physical conditions, their severe lung disease, cannot adhere to the ATS standards. And that's well understood and there are ways to evaluate that. So you cannot expect every claim to have textbook perfect testing techniques.

Q. But you know for a fact, though, if they don't follow the ATS standard that you're more likely to have unreliable results, right?

A. You could, as I said, tell that situation from just poor testing technique.

Q. Okay. And in the fifth paragraph, Mr. Austem talks about the failure of facilities to use the three spirometry tests in order to determine which result to use, correct?

A. Yes.

Q. And, again, it's recommended practice under the American Thoracic Society standards as well to use three spirometry tests and then to take the results from the best of the three tests, right?

A. It's not only three, it's three reproducible. Three tightly reproducible. So you might have to do six or eight tests to get three reproducible ones.

Q. And these are tests where the patient can through their own efforts affect the results, right?

A. Again, good testing personnel and technique can generally tell whether the patient is trying to do less than he can and can tell when a patient is so impaired that he cannot make these efforts three times. That happens with severely impaired patients, that the effort is simply too great to repeat a second, third time.

Q. And it also happens with patients that they can purposely affect their results, right?

A. Yes. And as I said, you can have some insight into which of those situations this is.

Q. And in this letter, Mr. Austem suggests not only are some of these cases perhaps benign cases, but some of them are not so benign, right?

A. By benign you mean that -- I would say that benign is actually unfortunate, but none of the ones are so well they cannot do multiple tests.

Q. The failure to follow the ATS standards Mr. Austem was expressing in this letter was a problem that goes beyond just --

A. Yes.

Q. Okay. And, in fact, he determined that he was concerned because he says they have many PFT results that don't meet these criteria?

A. Yes.

Q. Okay. And as a result of failure to meet these criteria, the trust would have resulted in overpaying claims, right?

A. If they're basing claims on results which are not the full results, I guess it's like paying welfare to people who earn money.

Q. Okay. And so what Mr. Austem then recommended in this letter was that they reevaluate the standards for PFT results in order to cure some of these problems, right?

A. Yes.

Q. And what he urged was the adoption of ATS standards, right?

A. Yes.

Q. And if the ATS standards were not met, then he was going to reject the claims, right?

A. I didn't read that part of it.

Q. It's paragraph one on page three. And he would reject the claims, right?

A. He goes on to say that he will rely on the physician's statement and accept the pulmonary function tests until I guess they have more convincing evidence.

Q. Well, they were going to go audit it, right?

A. Yes.

Q. Because they doubted the result, right?

A. (Witness moved head up and down.)

Q. Now, if you look at the next to last paragraph, Mr. Austem concludes that he has talked to four PFT experts who have conferred with him and two of them have told him on a number of occasions -- he says that they've testified for plaintiffs alleging asbestos personal injury and they've said that PFT's of less than 80 percent are routine among those who are not injured and don't suffer from any pulmonary disease, right?

A. That's what he says. I don't agree with it.

Q. You would agree that it's possible to compete in the Olympics and still have a total lung capacity or forced vital capacity of less than 80 percent?

A. I'm sure there are many things in the Olympics you could compete in. Sharpshooting I don't think would be terribly affected by that. I don't agree that it is routine. Among people who are

uninjured and who do not suffer from any pulmonary disease, that they routinely have results below 80 percent of predicted.

Q. You would agree that it is -- it occurs?

A. It absolutely occurs.

Q. Okay.

A. But it is not routine and I would question anybody who says it's routine.

(DFT. EXH. 9, document entitled Section F: Topic I, Medical Issues: How To React To Them, was marked for identification.)

BY MR. SCHROEDER:

Q. Doctor, I'm going to hand you -- we're going to skip a number here. I'm going to hand you what's been marked as exhibit number 9 and ask you to take a look at that. Exhibit number 9 is a document produced to us by the trust, which is a selection of

questions and answers on how to interpret the trust distribution process.

I'd like to direct your attention to page 1 of that exhibit, the next to the last paragraph. And the question raised on this says: If all we have is an ILO report marked one over zero or above, can we accept this as indicative of interstitial fibrosis? And the answer is yes. Do you see that?

A. Yes.

Q. And that's certainly -- if all you have

is an ILO report, that would not be sufficient clinical evidence of asbestosis, would it?

A. For an individual patient in my opinion by itself, no.

Q. Okay. Take a look at the next page, if you would, sir, the third paragraph down. Do all three of the PFT values have to be below 80 percent for impairment? Do you see that question?

A. Yes.

Q. And the answer is: No, only one of the three is needed.

A. Yes.

Q. All right. You would agree that by using one of the three, particularly DLCO, that the trust could be relying on a PFT result that would be

insufficient to separate out any potential smoking effect, right?

A. If that's another way of saying can decrease only in DLCO be due to smoking, the answer to that is twofold. One is I've already discussed how you correct for that, and two is you can have a smoking-related disease like emphysema in which the other measurements are not reduced and the DL is the only reduced value. And in that case, the disease that's causing it is truly not related to asbestos but entirely to smoking.

Q. To make that latter determination then, you would compare the DLCO to the other factors, the

other reports?

A. I would look at this other measurement, the FEV1 as well.

Q. And you recognize that the trust did not require an FEV1, right?

A. It did not require it. I don't know whether the estimation of the individual physicians they did not use that, because that would be standard for them to do.

Q. Sure. And so if you run a pulmonary function series of tests, you would have the FEV1 and the FEV1 over FVC available in every instance,

wouldn't you?

A. Yes.

Q. Okay. So it wouldn't have been any burden on a claimant who's providing DLCO to also provide that information, would it?

A. No.

Q. Skip down one more to the one that says if two or more PFT reports are provided with different dates, which one should be used to determine impairment. Do you see that question?

A. Yes.

Q. And the answer is the one with the most severe results. Do you agree with that conclusion?

A. I think we would have to address what we mean by different dates.

Q. Let's assume one is say in 1985 and the other one is in 1989.

A. Then the most severe results, by which I take it to mean the lowest values, are in '85 and they improved in '89, it would not be consistent with what we know about asbestosis to use the '85 values.

Q. Okay. And then if you switch -- or flip over to what's noted as page number 4 of this document, the last question. This speaks now to lung cancer. Does the word primary have to be stated for

a valid cancer claim? Do you see that?

A. Which?

Q. The last paragraph.

A. Okay.

Q. Do you see that?

A. Yes.

Q. And the answer is: Not always. The examiner and CRU members should consider a cancer primary if it is not interpreted in a medical report as metastatic from or as an unknown primary. Do you see that?

A. Yes.

Q. Okay. Doctor, in your opinion, is that sound clinical medical practice for the determination of a primary lung cancer?

A. If the question is if it only says cancer of the lung, does that mean a primary cancer of the lung, that would mean cancer of the lung. That's how

the terminology is generally used in medicine.

Q. All right. In many cases it can refer to cancer in the lung and it won't be primary, right?

A. Yeah, that would not be the terminology used.

Q. What would the terminology be used if there is cancer that's in the lung?

A. It would say cancer metastatic to the lung or metastatic cancer in the lung. It would not say lung cancer.

Q. Okay. If you simply have a pathology report that says that there is a finding aspirate from the lung?

A. Excuse me?

Q. If you have a pathology report that simply says that it was taken from the lung and it's positive for adenocarcinoma, that doesn't tell you whether it's primary or not, does it?

A. No, that would -- most likely it is because by far the most common situation in which that would arise would be with a primary adenocarcinoma of the lung. And there's no way for the pathologist to tell that. You would have to, in order to contest that, have other clinical information.

Q. Right.

A. That would contradict that.

Q. Okay. And so if your task was to pay only primary lung cancers, you would want that other clinical information in order to make sure it's not a metastatic cancer if there's no other phrase that tells you whether it's primary or not, right?

A. No, I would not. If it said cancer of the lung, lung cancer or bronchogenic carcinoma or any combination of that and it did not use the word primary, I would interpret it to mean that this was a primary cancer of the lung.

Q. If you were diagnosing a patient and were going to recommend that they have their lung removed, you would do more than simply rely on that kind of path report, right?

A. In most situations, if the path report was as you stated, I would not initiate a medical evaluation for an additional primary. We do not operate on patients without doing other testing.

Q. And what other testing --

A. For other reasons, but the other testing would give us other information as well.

Q. What other testing would you do to ensure that the cancer is not metastatic?

A. The problem is not that. The main problem with subjecting a patient to surgery to remove a part of his lung is not so much to -- that you're concerned that the tumor in the lung is from elsewhere, the real concern is that the tumor in the

lung has already spread elsewhere. And you will investigate the patient to make sure that the tumor

has not spread to other parts of the body.

Q. If, Doctor, you have a --

A. In so doing, you also may discover evidence that there is a tumor elsewhere, which may be the primary. That is a very unlikely situation.

Q. If you have a tumor that starts outside the lung and metastasizes, the lung is one of the top organs to which tumors metastasize, right?

A. Yes.

Q. And that's because the lung is highly vascular, right?

A. One reason, yes.

Q. And because of lymph node travel, right?

A. Yes, and the fact that all the blood must go to the lung.

Q. And so if your charge is to pay only primary lung cancers as a trust fund such as the Manville Trust, then you would have to adopt reasonable procedures to make sure that what you are paying for is not metastatic from another organ, right?

A. I think it is reasonable for the reasons I stated. If you look at the official discharge diagnosis that every hospital in North America must complete on every patient admission, if this is not

completed the hospital is not reimbursed, so it's quite carefully completed. The wording would be lung cancer, carcinoma of the lung, bronchogenic carcinoma. And it would not generally say primary because it is understood that if the problem is spread of a tumor from elsewhere to the lung, that would be stated.

Q. Okay. Where would that be stated? In what forms?

A. It would be stated in the official discharge diagnosis, in the discharge summary from the admission to the hospital.

Q. Okay. And under the TDP, under the paperwork that the trust required for determination of compensation, it doesn't require those papers, does it?

A. I have no idea what they require.

Q. If you would take a look at the TDP.

A. The TDP that you gave me was?

Q. It's on page 2.

A. I think it's much more voluminous document than I have here.

Q. Those are the first two pages. Those are the standards, Doctor. If you look at page 2 in the lower left column, category five, lung cancer, see

that paragraph one says claimant must demonstrate by medical report?

A. Yes.

Q. It doesn't say what kind of report, does it?

A. It says the claimant must demonstrate by medical report the existence of primary asbestos-related cancer of the lung. As I said, if the report says cancer of the lung, it is presumed to mean primary cancer.

Q. All right. Do you know that the trust has accepted reports that do not say that and have deemed them to be primary of the lung?

A. That has deemed reports that simply said lung cancer?

Q. Yes.

A. I would consider it appropriate to do so. If the report said carcinoma of the colon metastatic to the lung, then it would be inappropriate.

Q. Doctor, let's then talk about lung cancer for a minute. You have a small section in your report that addresses lung cancer.

A. Yes.

Q. Do you intend to opine in this case on

whether there -- or rather on any alleged synergistic

effect between asbestos and smoking for lung cancer?

A. If I am asked for my opinion, I would do so.

Q. I don't -- I don't see it on section B on page 6. And the question is: Would you agree with me that your report doesn't address the alleged synergy between asbestos and smoking for lung cancer?

MR. WESTBROOK: Counsel, you're reading a different report. The effect of these two different is synergistic.

MR. SCHROEDER: Does he intend to offer opinions on that at trial?

MR. WESTBROOK: That's what's in his report.

MR. SCHROEDER: Okay.

BY MR. SCHROEDER:

Q. Do you see that in your report, Doctor?

A. Yes. I have almost a full page on lung cancer. Admittedly it's not as small font as the other one, but... . I think that states the basis, not only my opinion, but the basis for my opinion.

Q. You cite at the end of that paragraph Selikoff '79. Is that the Hammond and Selikoff '79 paper?

A. There are two papers that overlap that are '79, one of which Hammond was the chief author and the other one of which Selikoff was. And they were both published in the same volume of the same

journal. Both of them are referred to in my references.

Q. All right. Would you agree with me, Doctor, that the opinions and conclusions that Dr. Selikoff reached in his studies on asbestos lung cancer synergy are outliers when compared to the balance of the rest of the literature?

A. Are outside the findings of other studies?

Q. Yes, that the ranges found by Dr. Selikoff in his papers are outliers compared to the ranges found by other researchers and reviewers.

A. Many other researchers have found the rates of lung cancer for different asbestos exposed populations to be less high but significantly greater than expected if they were not both smoking and asbestos exposed. Not as great as in the insulator study, but, again, demonstrating an interaction between the two.

Q. The rates found by Dr. Selikoff are the highest rates, aren't they?

A. I don't know whether they're the highest. I recall other papers again with highly exposed populations which were in the same range as Dr. Selikoff's as well as studies that were at a somewhat lower range.

Q. What is your definition of the word

synergy?

A. My definition may not be a precise one. Synergy is used in different ways. Synergy is a physiological term, means an interaction between two factors in which the effect of the two is greater than the sum of the two effects.

Q. Synergy implies a biological relationship, right?

A. Yes. I guess you could have the same thing in chemical terms, too.

Q. Okay. Whereas statistical interaction simply explains the observed statistical effects, right?

A. That is one set of definitions.

Q. Do reasonable minds differ on these definitions?

A. I think it is understood when the term is used in an epidemiological or population sense what is meant. The meaning is that the effect of the two

together is greater than the effect of the two added together.

Okay. And this goes back to the question you raised earlier in the report?

A. Yes.

Q. As to whose burden should this have been to have warned these people, right?

A. And, of course, if it's one person's burden or one industry's, it doesn't preclude it

being another's.

Q. Right. This goes back to your question then?

A. Yes.

Q. Of who should bear this, right?

A. Yes.

Q. Okay. Let's go to page 14 then. Under the paragraph there you wrote not true?

A. Again, about the pleural. Equals pleural injury.

Q. Okay.

A. I think I've stated several times that I see no evidence to find the relationship between pleural disease and --

Q. Okay. Now, in this very paragraph, though, Dr. Harris says he relies upon the literature cited by, among other people, you to support that conclusion, doesn't he?

A. Yes.

Q. And that's incorrect?

A. That is probably another example of not true.

Q. Okay.

A. Because I certainly did not say that.

Q. Okay. On page 16, again you've written not true on his report?

A. Again, about the pleural disease. I think I finally gave up.

Q. Okay. So anywhere in these reports where he talks about pleural disease, you would disagree with that?

A. Yes.

Q. Okay. Page 19 then, Doctor, you have underlined a section there in that first full paragraph. In that section, Dr. Harris is essentially saying, correct me if I'm wrong, that if -- in his counterfactual world, that is, worlds with less smoking by the claimants, if people would have lived longer and thus later filed a claim against the trust, he's not going to count those people for purposes of his model, right?

A. Yes, that's what I believe he was saying.

Q. Okay. And he uses the phrase death benefit, that in his view this would be giving a death benefit to whatever effect smoking may have on the claimant, right?

A. That's what he says.

Q. Isn't it really, true, though, Doctor, that if people live long enough, it's not a death benefit, what we're really talking about is the

adverse effects of asbestos exposure catching up with them, right?

A. I believe what he was saying was -- he goes on to develop this further, I guess it may have been in his next report, because this is number three.

Q. His competing risk analysis?

A. That if you -- I thought this was an example of that, that if you died of a more lethal disease, that if you had not died of it you still might have gotten a less lethal disease in passing of years. So if you didn't die of a mesothelioma, you might have gotten asbestosis if you had lived longer.

Q. But what he's saying here, though, is if you would have had some other disease associated with smoking and in his counterfactual world with less smoking you then wouldn't have that disease, he's not going to allow that claimant to make a claim against the trust, right?

A. I guess that's what he's saying. I didn't propose this argument.

Q. I understand.

A. I'm not sure I follow it completely.

Q. And what I want to ask you is since we

know that if you have sufficient asbestos exposure, that the risks are very high, that given time it will

catch up with you, won't it?

A. Yes.

Q. And so if he's taking people out of a model that otherwise would get asbestos exposure, he's excluding claimants?

A. Asbestos disease.

Q. Asbestos disease, rather. He's excluding claimants that in his model would incur disease and file a claim, isn't he?

A. I presume that that's what he's doing.

Q. Okay. Do you have any conceptual or other problems with the approach Dr. Harris is taking with this model?

A. If I understand the model, he has taken two considerations that were true of the asbestos workers who were particularly educated and motivated to quit smoking. One was that they discontinued smoking and two was if they hadn't started, they were more likely not to start. And he's tried to apply that to the trust.

I think there is validity to what he's doing. I don't attempt to analyze the mathematics or the statistics that he's applying. And there were

whole sections of pages with all kinds of Greek symbols that I did not attempt to read. I think there's a reasonable basis to what he's doing. Whether his approach is the best way to do it, I can't comment.

Q. Okay. Well, let's take a look at some of the things he's not doing. His model we've already determined is not taking account of those people who with less smoking in the world would still have an asbestos-related disease and likely file a claim, right? That's what we just talked about.

A. The ones who died?

Q. Right.

A. Because he certainly does account for the fact that asbestos alone will cause these diseases.

Q. He does, but then he doesn't take account -- doesn't account for those people who would have those diseases then with less smoking in the world under his analysis would still be around to file a claim?

A. I thought he did that somewhere. Maybe it's in the next report of his. I thought he did have that fallback situation.

Q. If he does not, then he's excluding people?

A. If he's saying that if they didn't smoke they wouldn't develop any of these diseases, then I don't think he's sufficiently addressed the issue.

Q. Okay. And once you're exposed to asbestos in a claimant population like this, you can actually get a more severe disease than asbestosis, you could get mesothelioma, couldn't you?

A. Yes.

Q. And so if he's got people that in his model don't file claims because they passed away earlier, those same people, if they had lived longer because of no smoking according to Dr. Harris, might very well develop mesothelioma?

A. Had they lived?

Q. Yes.

A. Yes.

Q. What is the relative risk for developing mesothelioma among a population of people exposed more than 20 years to asbestos?

A. Well, it varies by the trade they worked at. For the insulators, it's about 9 percent of deaths caused by mesothelioma.

Q. And for the other trades, it would be some function of that?

A. Somewhat less. Somewhat less.

Q. Okay. And would it be a function of that based on their level of asbestos exposure?

A. Yes. And also how long they were followed since that exposure.

Q. Okay. And what is the latency period for mesothelioma?

A. I would -- in general, it's 15 years or more.

Q. With respect to lung cancer, does it tend to be slightly longer than lung cancer?

A. I don't -- I don't think that the lower limit is any different, but we do see continuing mesotheliomas after longer exposure.

Q. In your stack, also, Doctor, I think is a copy of your -- of Dr. Harris' CV, rather; is that right?

A. Yes.

Q. Dr. Harris' CV, not yours.

A. Yes.

Q. Okay. If you would, on the first page of that, and let's -- we need to mark that as an exhibit. Is that part of those exhibits? It's over here on the right. Okay. It's part of exhibit number 10, I think it is. And the first page of Dr. Harris' CV, you've underlined the phrase primary

care medical practice?

A. Yes.

Q. Why did you underline that?

A. Because I don't know who Dr. Harris is and I was trying to figure out what kind of physician he was.

Q. He's not a pulmonologist?

A. That's what this piece of paper tells me.

Q. Okay. What does it mean to you to have a primary care medical practice physician developing this model instead of a pulmonologist developing this

model?

A. I don't think that matters because the model really is a statistical creation. If he has the background, the statistics, he doesn't have to be a physician at all.

Q. But in terms of relying on which diseases to include in the model and the relationship of those diseases, he may make mistakes as in the case of the pleural disease?

A. Anyone may make mistakes. If you're asking me would I advise him to be very knowledgeable about these diseases which are pulmonary diseases, absolutely. I don't think the fact that he's a

primary care physician precludes that level of knowledge he needed for the analysis. I might question if he got involved with some of the fine points of the pulmonary function test interpretation. I don't think a primary care physician would be knowledgeable in that in general.

Q. You've not had any discussions at all with Dr. Harris, have you?

A. No.

Q. On the back of your CV you've written on there what does he actually do, is that right?

A. Yeah. I recorded for my own sake that I thought his education was impressive and his interests were impressive. I asked what does he actually do, does he practice primary care medicine.

Because you could be on the teaching faculty and not actually practice and --

Q. Why was that important to you?

A. I wanted to know how involved he was with actual problems of caring for patients.

Q. Okay. What does that say right below that?

A. I said he makes his reports look like academic papers. He follows a format of an academic paper.

Q. So you certainly had the impression, I take it, that he was more academic than clinical?

A. No. I mean, how you organize your paper doesn't tell you how academic you are. I was simply impressed with how he did it and with the number of references in Sullivan.

Q. All right. Doctor, I'm going to ask you now about report number four, is not in that group, is it?

A. It's in the bound volume.

Q. It's in the bound volume. And I don't know that copies were made of the bound volume, so I'm going to ask you right here. You've got written on report number four, there's a section that says my analysis -- this is Dr. Harris. The insulation workers' data confirmed a longstanding conclusion that smoking and asbestos exposure jointly increased

the death rate from lung cancer, and that quitting smoking reduces the lung cancer risk gradually over a period of three decades. Somewhere you've written in the margin contrary to MS conclusions. What do you mean by that?

A. No, that remark was about his next statement about pleural injury.

Q. Okay. That's another comment where he

relates pleural injury to smoking?

A. Yes.

Q. And you disagree?

A. Yes. I said contrary to the Mount Sinai conclusion because there are a number of papers by other people at Mount Sinai who said the same thing as I did.

Q. Okay. Would you pass that back to me, please, sir? How many of your patients, Doctor, tend to file claims for compensation for asbestos-related disease?

A. Of my patients?

Q. Yes, sir.

A. That's very hard for me to say because I often see them after they've already initiated claims.

Q. Are they referred to you for purposes of evaluation?

A. Sometimes they're -- I'm not counting the ones that are sent to me by attorneys for evaluation,

but I will see patients who have mesothelioma who see me for advice on best care, but they've already filed a claim.

Q. So what percentage of your patients either are referred to you for compensation reasons

or otherwise file compensation claims?

A. Well, the ones referred to me for evaluation to assess their condition for their claim have a claim filed already, so I'm removing those from consideration in answering your request. If I were to see a patient newly diagnosed in asbestos related disease, how likely would that guy be likely to file a claim? I feel it incumbent upon me to tell him he has a possibly compensable condition and he should seek legal advice.

Q. Okay.

A. What he does after that I don't often know.

Q. Okay. A number of the trust claimants -- strike that.

Doctor, it's true, is it not, that many of your patients and former patients are and have been claimants to the Manville Trust?

A. I'm sure.

Q. Okay. And those patients you understand are getting paid now only ten cents on the dollar by the trust?

A. Yes.

Q. And so they're looking to get further reimbursement from the trust?

A. I think quite reasonably.

Q. Okay. If you look at page 19 of Harris report number 4, Dr. Harris in that section comes up with a difference in the quit rates between the insulator cohort and the claimant pool of 2.4?

A. Yes.

Q. Or 2.44, right?

A. Yes.

Q. Why did you put question marks to the margin on that?

A. I didn't follow the rest of his argument where based on that he --

Q. He then --

A. He talks about threefold higher, et cetera. I didn't see the connection.

Q. So you didn't see any substantiation for his reaching that conclusion?

A. The three.

Q. Right.

A. I mean if it was 2.4, then 2.4 would be appropriate.

Q. Okay.

A. But that's not speaking as a statistician.

Q. What is this word on page 25 of report

number four written in the margin?

A. First, I assume that a claimant can start smoking at any age from ten to 50 years old. I said this is unlikely. We have a good deal of information on when people start smoking. And, unfortunately, they can start smoking at ten, but they're not likely to have never smoked and start smoking at 50.

Q. Okay. So you found that conclusion to be -- that assumption to be unlikely?

A. That 50 you're part of it. That's a less important problem because somebody who starts smoking at 50 is probably not going to run into the problems of smoking, he's going to die before that, but still it was a funny statement.

Q. Would you agree with me, Doctor, that in terms of assessing a risk for lung cancer for smokers that intensity of smoking is an important factor?

A. Risk of lung cancer?

Q. Yes, sir.

A. Yes.

Q. Okay. Did you look at any of his statistical analysis?

A. I skipped it.

Q. So you don't intend to offer an opinion on that?

A. I don't know the degree of what I skipped.

Q. And I think you told us earlier for statistical analysis you tend to refer to the physicians who rely on your study?

A. Yes.

Q. What page is that report, Doctor?

A. 42.

Q. And the arrows there are written for what purpose?

A. I thought it was a good summary of the data of an important topic.

Q. Okay. You don't have any, I take it, though, opinion on the reliability or not of his analysis?

A. No. I would hope that it is reliable. I would like to quote it.

Q. Okay. Let's mark these. Also, in exhibit number 10 here is a list of court appearances.

A. Yes.

Q. These are all the court appearances you've made?

A. Yes.

Q. Including depositions?

A. Yes. We discussed that earlier.

Q. Okay. And then just for the record, there's a stack of epidemiological studies contained in exhibit number 10 and these are the studies to which you referred earlier when we walked through the --

A. Yes.

Q. -- epidemiological studies dealing with section IV A 1 of your opinion?

A. Yes.

Q. Of your report. Okay. Would you agree with me, Doctor, that what Dr. Harris is doing in his report -- in his report by trying to estimate quit rates among smokers is making assumptions that they would have received warnings, in addition to the warnings they did receive, through unions and doctors and others is speculative?

A. I don't think it was speculative. I think coming up with a specific percentage has perhaps a speculative component. But I think the premise that if they were sufficiently informed, warned, scared, if they knew and understood the information that they would be more likely to quit, I think that's quite reasonable.

Q. Well, the premise of Dr. Harris' report

is that more information would have been helpful, right?

A. Well, I don't know whether more or more

effective or directed specifically at them in ways they could understand. All of those.

Q. Okay. Has it been your experience that ever since you've been seeing patients you have advised asbestos-exposed individuals to quit smoking?

A. Yes.

Q. And has it been your experience that all of your colleagues do likewise?

A. I can't speak for all of my colleagues. The ones -- many of them do. I don't know if they all do. I don't think there is one of them who has ever said just continue smoking, it doesn't make any difference.

Q. Would you agree that the risks of smoking have been known at least since the warning labels have appeared on cigarette packages?

A. I think that's the distinction I wanted to make, is that quite a major difference between knowing something and really knowing something. And physicians face that in many ways. People know they should stop eating a lot of cholesterol-rich foods. They know they should exercise. They suddenly really

know it after they have their first heart attack. People with a second -- after their first heart attack are much more cognizant. They knew it before, but they were able to avoid it, to not recognize it, et cetera.

Q. You said they knew it before. That was

information already given to them?

A. We're talking about these -- using the example of diet and heart disease.

Q. Okay. And I want to use the example of smoking. The risks of smoking have been common knowledge among Americans since the warning labels have appeared on the packs in the late '60s, right?

A. They -- the labels are on the packs, there are billboards that even then that began advising you not to smoke, and sometimes in very clever and effective ways. People have a way of seeing what they want to see and not seeing what they don't want to see. And there are more effective ways to make them see it than the ways that were being used.

Q. In your practice, is it fair to say that the most effective way for the patients to understand this information is through their physician?

A. Well, there are patients who don't listen

to their physician at all. Sometimes they think it's the least effective. I think that's one way, yes. I think there are peer groups, if we could get to them. Their coworkers are a good way. And I think authority figures in the world around them, in the advertising world.

I think if they did not see some great sports heroes and movie stars lighting up in the

commercials or on the billboards 30 years ago, if they had seen the opposite message from the same people, it would have been more effective to get them to quit.

Q. Okay. Finally, Doctor, in your experience dealing with asbestos-exposed individuals, would you agree that those individuals have, in fact, received a wealth of information through unions, physicians and other media sources, public health community, on the dangers of asbestos and smoking?

A. The insulators, yes, in their union publications and union meetings. I've spoken at these meetings. My colleagues have. Dr. Selikoff used every interaction with them to make the point. I don't know that all the other trades have. In fact, I have reason to believe that certain other trades have not.

Q. What reason is that?

A. Because when I speak to some of the workers or even union officials and employers in those fields, they don't want to hear it.

Q. What do you mean they don't want to hear it?

A. They don't want to hear that there's a risk of asbestos and smoking. If they don't accept the risk of asbestos, they're not going to accept the risk of interaction or they're not interested in the smoking because of not being interested in hearing

what they don't want to hear.

Q. And when you say they don't want to hear it, you mean you tell them anyway and they don't -- they don't want to listen?

A. Well, you can get a reasonable impression of whether you're sinking in or not when you say something. I think anybody who has kids could tell you that. There are times you know your kids are listening and there are many times you know you could say whatever it is and it doesn't matter. The same is true of all folk.

MR. SCHROEDER: Thank you, Doctor. Mr. Duncan has a few questions for you and I think we'll be done.

THE WITNESS: Give your voice a rest.

EXAMINATION

BY MR. DUNCAN:

Q. Doctor, my name is Tom Duncan. We've earlier been introduced. I've got a couple questions for you. You mentioned that they didn't really know, and you're talking about patients, and used the heart disease and diet example, that they didn't really know it until they had their first heart attack?

A. They didn't want to know it.

Q. But then they really knew it you said after they had their first heart attack?

A. Yeah.

Q. Would also another term for really knowing it be motivation?

A. Yeah.

Q. At that point now they're motivated to make those changes?

A. Well, I think really knowing it led to motivation, yes.

Q. Okay. So seeing it happen to them gave them the motivation?

A. Right. Sometimes it happens to the guy next to them and it works, also.

Q. I see. All right. Doctor, do you smoke?

A. No.

Q. Have you ever?

A. I think two cigarettes when I was about 12. And that taught me I was not interested in continuing. Long before I was a pulmonologist.

Q. All right. So you've never smoked a pipe or a cigar?

A. Oh, I think I smoked on the college campus a couple of bowls full of pipe tobacco because it was a very in thing to do and I very carefully did not let it get me or my inhaled air.

Q. And the reason for that?

A. Is it made me feel terrible.

Q. All right. Earlier we were talking about cigarette smoking and its interaction, if any, with -- in producing asbestosis. Let me ask you,

Doctor, does smoking by itself cause fibrosis?

A. Fibrosis as a clinically diagnosable disease, pulmonary fibrosis, no. On examining lung tissue of smokers under the microscope, you could see changes in certain parts of the lung, including fibrosis, attributable to the smoking, but not clinical disease.

Q. You say when examining it under the microscope. You personally or in studies you've

read?

A. In studies I've read and looking along with a pathologist at what he was talking about when he reported this in patients. We do -- we remove lungs for various reasons and the pathologist will describe a respiratory bronchiolitis and slight areas of fibrosis which he says are related to smoking. I make it a practice to review these with the pathologist.

Q. So the inflammation and -- let me go -- first of all, you mentioned bronchiolitis. Does bronchiolitis that occurs in smokers, is that a common occurrence?

A. Yes.

Q. What percentage of smokers would you say would have smoker's bronchiolitis?

A. I'd say a large percentage.

Q. 80, 90 percent?

A. We don't do -- we don't have lung tissue lots of times. This is detectable in the lung tissue under the microscope. And one of the penalties of smoking is not that they have to have their lung tissue removed. We haven't come to that yet. So I can't say. I would suspect from observations made in smokers who died of other reasons that it would be

over 50 percent.

Q. All right. Doctor, would you describe the type of fibrosis that you have just commented on as diffuse interstitial fibrosis or is there a particular area of the lung that you say would be most effective?

A. No, I would not call it diffuse interstitial. I would call it peribronchiolar fibrosis.

Q. Is this fibrosis that you say occurs in your estimation in over 50 percent of smokers, is that visible radiologically?

A. No. Not -- not clearly. There may be minor changes that don't look a hundred percent normal that if one were using the I and O classification you might read zero, one, maybe -- I don't generally. Maybe occasionally one, zero. So they're not clearly normal, but they're not really diagnosable.

Q. All right. So there would be little risk then for a competent B-reader such as yourself who

would look at someone who had never been exposed to asbestos but had been a lifelong smoker and there would be little risk of confusing their reading with someone who had asbestos exposure on B-reading, for

instance?

A. I think on the whole that's true. As I said, in a heavy smoker where you're beginning to see something, maybe at the zero, one/one, zero level. But, in general, not. And we routinely read X-rays of people who are not asbestos exposed and who smoke and we don't read -- maybe one or two percent as having zero -- one, zero readings. So I think that that experience exists.

Q. The bronchiolitis that you described, if a person were to quit smoking, would you expect that eventually the inflammation would disappear?

A. Yes, it would -- I don't know it would disappear. It would -- it would get better. It would diminish. Fibrosis doesn't disappear. We know that not only from the pathology, but from pulmonary function tests. There are certain pulmonary function tests that can detect the alterations in the small airways, the bronchioles. And these abnormalities are very common in smokers, again about 50 percent or more. And when they stop smoking, they improve.

Q. So if you refer to them small airways disease, you're talking about bronchiolitis?

A. To a great extent, yes.

Q. And would that be obstructive or

restrictive disease?

A. It doesn't generally show up in the standard pulmonary function tests. You have to look at certain measurements and then we would call it small airways. We could use the word small airways obstruction.

Q. All right. Does the bronchiolitis, the inflammation, does it spread to the alveoli and cause inflammation there as well?

A. Not in my understanding or experience.

Q. Okay. Doctor, it's -- you've given the opinion today that -- I want to make sure I understand it right. Are you saying that cigarette smoking -- well, in cigarette smokers who are exposed to asbestos that the rate of asbestosis is higher?

A. Yes.

Q. All right. Do you have a mechanism for how that would happen?

A. I have a general concept in that both asbestos and smoking initiate inflammation, especially in the -- around the small airways. Asbestos is a cause of respiratory bronchiolitis as well and inflammation can progress on to fibrosis. So I can see where two causes of inflammation will result in a greater degree of damage than one and may

even -- each feed on the other.

Q. Is it your understanding, Doctor, that the fibers -- that the asbestos fibers that cause asbestosis cause asbestosis because they are carried by air currents to the very distal lung out to the alveolar duct bifurcations and out to the alveolar surface itself? Is that your understanding?

A. That is one mechanism for producing, and we call that alveolitis. They are also blamed in the respiratory bronchioles, the terminal bronchioles, these small airways. They initiate an inflammatory reaction and fibrotic reaction around those. So they don't have to directly land in the alveoli. And that reaction progresses along the tissue into the alveoli. So there are two ways that asbestos fibers can cause or set up the process that causes asbestosis. One begins in the small airways and one in the alveoli.

Q. Doctor, do you know Dr. Brody?

A. Yeah. I was asked that question. I met him. I heard him speak. I know some of his writings.

Q. What is Dr. Brody's area of expertise as far as you know?

A. Well, what I heard him speak about or

what I've read of his writings are on the molecular biology of various lung diseases, including asbestosis.

Q. Okay. Doctor, would you agree that asbestos fibers that land in the ciliated airways are not involved in the production of asbestosis?

A. I don't know that they're not involved. I'm not a pathologist. I would guess that they're less likely to be involved because the ciliated airways are further up from the lung parenchyma and there are other mechanisms to get rid of them even if they land.

Q. Doctor, would you agree that the mucociliary escalator is not a particularly good way to clear fibers from the lung?

A. I think it's a pretty good way. Unfortunately, it's not as good a way in smokers as it is in nonsmokers because smoking has various deleterious effects on this mucociliary escalator.

Q. So you think it's a good way to -- do you think fibers are as easily cleared as other dust?

A. Fibers may not be as easily cleared as other particles, but I think it's a pretty effective mechanism in general. Otherwise, we'd all be dead long ago. We are inhaling hazardous pathogenic

fibers all the time, particles all the time. And you could consider viruses and bacteria in that

category. And they are cleared.

Q. Is it your understanding, Doctor, that asbestos fibers can be carried to the distal lung all the way to the alveolar surface by air current?

A. Yes, some of them.

Q. And how are asbestos fibers that land on the alveolar surface cleared?

A. They can be removed by alveolar macrophages. This is not a perfect -- this is a less perfect system for asbestos fibers. Some of them do move towards the bronchioles and ultimately can be brought up on the mucociliary escalator.

Q. To a surfactant or to a macrophage?

A. Other -- I don't know what -- which specific secretion in the lung makes that possible. It may be surfactant. I don't know.

Q. Would you agree that asbestos fibers that are inhaled into the lung parenchyma carried there by air currents tend to remain in the lung for years?

A. A large number of them do. Some of them are cleared, as we've said. But if they do remain, they can be present for many years.

Q. If you take the surface area of the

ciliated airways and compare to the surface area of the alveoli, what would be the ratio in percent? 1 percent, 99 percent?

A. One to 99 or what? Are you giving a

range or?

Q. Well, for instance, would you agree that the surface area of the ciliated airways is about 1 percent of the total lung surface area?

A. It's much less. I can't give you a percent.

Q. Would you agree that most of the asbestos fibers that are retained in the lung are retained in the nonciliated airways?

A. Yes.

Q. And would you agree that -- I think I asked you this before in another way. That these asbestos fibers are persistent in that area of the lung?

A. Well, again, which particular area? Many of them are persistent, yes.

Q. Does it matter which fiber type?

A. To some degree.

Q. What is more persistent than something else?

A. We know that chrysotile is more likely to

be degraded by the processes in the lung and to be broken into smaller particles and cleared.

Q. As opposed to crocidolite asbestos?

A. As opposed to crocidolite and Amosite.

Q. Doctor, would you agree also that there is no declining risk -- and let's just talk now about asbestosis. Once an individual has stopped being

exposed to asbestos, their risk of asbestosis does not go down?

A. In general that's true. I mean, there have been studies of this, quite many, and some individuals don't progress when exposure stops and some do progress. And my guess is that more of them don't progress compared to those who continue exposure, but many of them progress when exposure stops.

MR. DUNCAN: Could we go off the record for just a moment?

VIDEO TECHNICIAN: We will now go off the record. The time is approximately 7:02 PM.

(A recess transpired.)

VIDEO TECHNICIAN: Back on the record. The time is 7:04 PM.

BY MR. DUNCAN:

Q. Doctor, just a couple more questions to

finish up. You mentioned that you diagnose cancer earlier, you mentioned that. Do you diagnose cancer in your patients?

A. Yes, if they have it. It's what I try to do.

Q. Okay. And how do you do that?

A. Are you talking lung cancer?

Q. Yes. I'm sorry.

A. Well, there are many -- I mean, there are

whole textbooks on this subject. Unfortunately, we usually diagnose it when a patient presents with a symptom. And that might be coughing up blood or chest pain or weight loss or lots of other bad symptoms. We also hope to diagnose it earlier. That's an entirely new area of pulmonology in public health in which the CT scan may enable us to detect lung cancer earlier, but that is yet under investigation.

Q. I take it you don't inform a patient that they have lung cancer until such time as you've heard back from the pathologist, correct?

A. We tell the patient, and this has to be modulated to that particular patient what we are suspicious of. The words we use may vary from patient to patient, but we can certainly say we're

suspicious, we're concerned, there's evidence to indicate that he has a lung cancer, but we don't -- we try in every single case to substantiate the diagnosis. In fact, there's a rule that you will not start chemotherapy or radiotherapy without a pathologically established diagnosis.

Q. Doctor, are there some types of lung cancer that are more or less associated with smoking?

A. Yes. Do you want me to answer that question?

Q. Yes. Sure?

A. Or I could leave it at yes. Yes,

squamous cell and small cell cancers are most -- all are adenocarcinomas or less.

Q. And BAC is a variant of adenocarcinoma, even less?

A. Probably in the same category.

Q. Are there cell types, Doctor, of lung cancer that are more or less associated with asbestos exposure; and, if so, what are they?

A. There are reports in the medical literature that adenocarcinomas are. That's hard to prove because in general we have been seeing more adenocarcinomas. So whether -- my belief is that we see all types of lung cancer in asbestos exposed

individuals, and I don't generally use the type of lung cancer to prove anything.

Q. And as a follow-up to that, Doctor, is it part of your practice to ascribe causation to malignancy? In other words, do you -- is it part of your practice to say what caused an individual's cancer?

A. Do I tell a patient, look, your cancer is due to your smoking and that's why you're going to die? I don't generally say that. If a patient asks or if the children of a patient ask, I will.

Q. And what are your criteria for deciding causation? What do you have to have in a patient before you'll tell the family or whomever or a Court

that that person's cancer was caused by in this case smoking?

A. I think if a patient smoked more than incidentally, by that I mean he smoked a couple of cigarettes when he was a teenager or something or he smokes a cigarette every birthday. If he smoked on a more regular basis and he has a carcinoma of the lung, there is an association and the smoking contributed to his cancer.

Q. All right. And I'm asking to a reasonable degree of medical -- so you would testify

if an individual had ever smoked more than two cigarettes as a teenager, as you said, or one cigarette every birthday, if they had smoked more than that and they developed lung cancer, you would testify to a reasonable degree of medical certainty that their cigarette smoking caused their lung cancer?

A. I think I was using that for dramatic effect. I wouldn't say if he smoked three cigarettes instead of two in a lifetime. I think my point was clear, that somebody smoked regularly for a period of time of perhaps six months or a year or more, I would make that association as stated.

Q. So let's say a year, someone who had smoked for a year, quit at age 25, develops a lung cancer at age 65, you would say cigarette smoking caused that lung cancer?

A. No, we didn't discuss somebody who has quit smoking 40 years. I would have to look at his smoking history and his duration of cessation. And I don't think we have information for some of these specific situations. How long do you have to quit before you don't have a discernible risk? We were hoping it would only be ten years. And evidence seems to show that it's -- you don't ever go back to

your -- the risk of a nonsmoker. You could have quit 20 years. So this is something that we evaluated.

Q. Before you were -- before you would testify that someone's cancer was caused by asbestos or cigarette smoking or anything else, is there more information in an individual case that you would like to have before making that determination?

A. Well, I'd like to know the specifics, the extent of his exposures. I would not like to simply be told he was exposed to asbestos because that could mean many different things. I'd like to know how and for how long and under what conditions. And the same thing for his smoking. What else would I like to know? I would like to know that truly this was a lung cancer. And if both of those were true, I would make an association.

Q. All right. An association, are you drawing a distinction between an association and causation?

A. No, I would make a causative association. Again, I would have to have certain specifics for the asbestos exposure. My general rule, and there's no information to guide me, would be that he should be exposed for a period of at least three weeks in a truly describable way. I can't

argue that four weeks should be in the same category or two weeks. And it would have to meet the latency we know about lung cancer and asbestos.

Q. Would you like to know if he had had other occupational exposures to other occupational carcinogens?

A. Yes. And if that was the case, then all of them would be contributory.

Q. Well, let me ask you this then. If you have someone who had exposure to -- let's say they worked in an aluminum factory in a pot room, which as I'm sure you know generates various carcinogens, at least according to IARC. And let's say he worked in a pot room of an aluminum factory, exposed to asbestos and smoked and came down with lung cancer. Are you able to determine to a reasonable degree of medical certainty which of those three exposures caused it or would you just say all caused it?

A. I would say they all contributed and I don't have the information to apportion the contributions.

MR. DUNCAN: Doctor, that's all I have.

EXAMINATION

BY MR. SCHROEDER:

Q. The only thing I would like to do on the

record is your bound report of Dr. Harris' report, Doctor, we did not make a copy of. And I simply ask if we could get a copy of that made and mark it as part of exhibit number 10, which contains the other Harris reports. Is that okay with you, Doctor?

A. The only one -- there were no notations on five, and you have one to three, so that's only four.

MR. WESTBROOK: That's correct.

MR. SCHROEDER: Okay.

MR. WESTBROOK: All right. That's what we'll do then.

BY MR. SCHROEDER:

Q. All right, Doctor, thank you. Now, we had asked you a couple times -- there were a couple things you were going to look at I think during a break.

A. Yeah, and I did not have the chance and I have no stamina to do so now, quite frankly. These are the ones. You're free to make copies and I'll review them at some other time.

MR. SCHROEDER: Okay. So to the extent that we had a --

A. I don't think I could intelligently read

any one of those things now.

MR. SCHROEDER: To the extent we had a question pending that we didn't get an answer to, at least as we sit here today then, you don't have an answer for those questions pending any further review of the studies?

A. No, I did not review. I don't think we had much time at our breaks to do that.

MR. SCHROEDER: Okay.

MR. WESTBROOK: No, we didn't.

MR. SCHROEDER: Thank you, Doctor.

VIDEO TECHNICIAN: This concludes the deposition of Dr. Albert Miller. The time is approximately 7:16 PM. We are now off the record.

(The deposition concluded at 7:16 PM.)

CERTIFICATE OF REPORTER

I, Terri L. Brusseau, Registered Professional Reporter and Notary Public for the State of South Carolina at Large, do hereby certify that the foregoing transcript is a true, accurate, and complete record.

I further certify that I am neither related to nor counsel for any party to the cause pending or interested in the events thereof.

Witness my hand, I have hereunto affixed my official seal this 12th day of June, 2000 at Charleston, Charleston County, South Carolina.

_____
Terri L. Brusseau,
Registered Professional
Reporter, CP, CRR
My Commission expires
May 7, 2006.

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